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OM protein - protein search, using sw model

Run on: January 13, 2005, 15:29:11 ; Search time 93 Seconds
(without alignments)

4366.468 Million cell updates/sec

Title: US-10-053-758-225

Perfect score: 5961

Sequence: 1 MPRAPRCRAVRSILRSYRE.....TALEAAANPALPSPDFKTIILD 1132

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 2002273

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : A Geneseq_23Sep04:*

1: Geneseqp1980s:*

2: Geneseqp1980s:*

3: Geneseqp2000s:*

4: Geneseqp2001s:*

5: Geneseqp2002s:*

6: Geneseqp2003as:*

7: Geneseqp2003bs:*

8: Geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Match	Query Length	DB ID	Description
1	5961	100.0	1132	2	AAW46957 Human tel
2	5961	100.0	1132	2	AAW90251 Human cat
3	5961	100.0	1132	2	AAW28881 Human tel
4	5961	100.0	1132	2	AAW32090 Human tel
5	5961	100.0	1132	2	AAW43621 A human t
6	5961	100.0	1132	2	AAW26580 Human tel
7	5961	100.0	1132	4	AAW64859 Heart mus
8	5961	100.0	1132	4	AAW64329 Human pro
9	5961	100.0	1132	4	AAW99930 Human tel
10	5961	100.0	1132	4	AAW82765 Human tel
11	5961	100.0	1132	5	AAW29226 Human tel
12	5961	100.0	1132	5	AAW72735 Human tel
13	5961	100.0	1132	6	AAW42384 Human tel
14	5961	100.0	1132	6	AAW42063 Human tel
15	5961	100.0	1132	6	AAW56676 Human tel
16	5961	100.0	1132	6	AAW58045 Human tel
17	5961	100.0	1132	7	AAW21420 Human TER
18	5961	100.0	1132	7	AAW72743 Human pro
19	5961	100.0	1132	8	AAW70114 hTERT pro
20	5961	100.0	1132	8	AAW90599 Human TER
21	5961	100.0	1132	8	AAW182172 Human tel
22	5961	100.0	1154	2	AAW61350 Human tel
23	5961	100.0	1189	2	AAW47008 Glutathio
24	5955	99.9	1285	2	AAW47000 HIS tagge
25	5954	99.9	1132	2	AAW71376 Human tel

ALIGNMENTS

RESULT 1

AAW46957

ID AAW46957 standard; protein; 1132 AA.

XX AC AAW46957;

XX DT 13-AUG-1998 (first entry)

XX DE Human telomerase reverse transcriptase.

XX KW Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis; cell proliferation; cancer; ageing; ribonucleoprotein.

XX OS Homo sapiens.

XX PN GB2317891-A.

XX PD 08-APR-1998.

XX PF 01-OCT-1997; 97GB-00020890.

XX PR 01-OCT-1996; 96US-00724643.

XX PR 18-APR-1997; 97US-00844419.

XX PR 25-APR-1997; 97US-00846017.

XX PR 06-MAY-1997; 97US-00851843.

XX PR 09-MAY-1997; 97US-00854050.

XX PR 14-AUG-1997; 97US-00911312.

XX PR 14-AUG-1997; 97US-00912951.

XX PR 14-AUG-1997; 97US-00915503.

XX (GERO-) GERON CORP.

XX (UYTB-) UNIV TECHNOLOGY CORP.

XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB; Andrews WH;

XX WPI; 1998-171633/16.

XX N-PSDB; AAV22379.

XX Pure and recombinant human Telomerase Reverse Transcriptase and its variants - are useful in the diagnosis, prognosis and treatment of cell proliferation conditions especially cancer and ageing.

XX Claim 3; Fig 17; 387pp; English.

XX The present sequence represents human telomerase reverse transcriptase (hTERT), which is a ribonucleoprotein. The present invention also describes the following methods: (A) determining whether a test compound

is a modulator of hTERT, by detecting the change in hTERT recombinant protein or polynucleotide, on administration of the compound; (B) preparation of recombinant telomerase by contacting a protein preparation of hTERT with a telomerase RNA component; (C) detection of the hTERT RNA or protein in a sample by binding a relevant probe to the sample and detecting the complex formed or in the case of RNA detection, amplifying the product and correlating the presence of complex or amplification product with presence of hTERT in the sample; and (D) increasing the proliferation of a vertebrate cell by increasing hTERT expression; and (E) the use of an agent that causes an increase in cell vertebrate cell proliferation to create a medicament that inhibits ageing. A protein preparation of hTERT and the polynucleotide encoding hTERT can be used in the manufacture of medicaments for inhibiting the effect of ageing or cancer. Inhibitors of telomerase activity can be used to treat conditions that are associated with high telomerase activity. A protein preparation of hTERT can also be used in the new methods

Sequence 1132 AA;

Query Match	100.0%;	Score 5961;	DB 2;	Length 1132;
Best Local Similarity	100.0%;	Pred. No. 0;		
Matches 1132;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;

QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVQRGDPAAFRALVAQCLVCVPM 60
 DB 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVQRGDPAAFRALVAQCLVCVPM 60
 QY 61 DARPPPAAPSFROVSCLEKELAVLQRLCERGAKNVLAQFALLDARGGPEAFITSVR 120
 DB 61 DARPPPAAPSFROVSCLEKELAVLQRLCERGAKNVLAQFALLDARGGPEAFITSVR 120
 QY 121 SYLPTNTVDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
 DB 121 SYLPTNTVDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
 QY 181 ATQARPPPHASGPRRLGCBRAWNHSVREAGVPLGLPAPGARRGGASRSPLPKRPRR 240
 DB 181 ATQARPPPHASGPRRLGCBRAWNHSVREAGVPLGLPAPGARRGGASRSPLPKRPRR 240
 QY 241 GAAPEPERTVPGGSAHAGRTGSDRGFCVUSPARPAEATSLGALSGRTHSHPSVG 300
 DB 241 GAAPEPERTVPGGSAHAGRTGSDRGFCVUSPARPAEATSLGALSGRTHSHPSVG 300
 QY 301 RQHAGPPSTSRPRPDWTPCPVYAEKTHFLYSSGDKQLRPSFLLSLRSLTGARLL 360
 DB 301 RQHAGPPSTSRPRPDWTPCPVYAEKTHFLYSSGDKQLRPSFLLSLRSLTGARLL 360
 QY 361 VETIFLGSRPWMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
 DB 361 VETIFLGSRPWMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
 QY 421 PAAGVCAREKPGQSAAPREEDTPRLVQLLRQHSHPQVYGFVPAACLRRLVPPGLMGS 480
 DB 421 PAAGVCAREKPGQSAAPREEDTPRLVQLLRQHSHPQVYGFVPAACLRRLVPPGLMGS 480
 QY 481 RHNERFLRNTKFFISLKGAKLSLQELTWKMSVRDCAWLRRSPGVGCPAAAEHLRBEI 540
 DB 481 RHNERFLRNTKFFISLKGAKLSLQELTWKMSVRDCAWLRRSPGVGCPAAAEHLRBEI 540
 QY 541 LAKFLHLMVSVYVELLSFFVYTTTFOKNRLFYRKSVWSKLQSIGIRQHLKRVQLRE 600
 DB 541 LAKFLHLMVSVYVELLSFFVYTTTFOKNRLFYRKSVWSKLQSIGIRQHLKRVQLRE 600
 QY 601 LSEAEVRQREARPAALLTSRLRFIPKPDGLRPIVNMVYVGARTFRREKRAERLTSRVKA 660
 DB 601 LSEAEVRQREARPAALLTSRLRFIPKPDGLRPIVNMVYVGARTFRREKRAERLTSRVKA 660
 QY 661 LFSVLNRYEARPGLLGASVLGLDDIHRARWRTFVLKRVRAQDPPPELYFKVDVDTGAYDTI 720
 DB 661 LFSVLNRYEARPGLLGASVLGLDDIHRARWRTFVLKRVRAQDPPPELYFKVDVDTGAYDTI 720
 QY 721 PDRLTEVTIASIKPQNTYCVRRYAVVQKAAHGHVRKAPKSHVSTLTDLPQYMRQFVAHL 780

Db	721	PDRLTEVTIASIKPQNTYCVRRYAVVQKAAHGHVRKAPKSHVSTLTDLPQYMRQFVAHL	780
QY	781	QETSPLRDAVVTQSSSLNEASSGLFDVFLRFMCHHAVIRKSKYVQCQIPQGSILSTL	840
Db	781	QETSPLRDAVVTQSSSLNEASSGLFDVFLRFMCHHAVIRKSKYVQCQIPQGSILSTL	840
QY	841	LCSLCYGDMENKLFAGIRRDGILLRLVDDFLAVTTPHLTHAKTFLRTLVRGVPEYGCVVNL	900
Db	841	LCSLCYGDMENKLFAGIRRDGILLRLVDDFLAVTTPHLTHAKTFLRTLVRGVPEYGCVVNL	900
QY	901	RKTVNVFPVEDBALGTAFAVQMPAHGLFPWCGLLDDTRTLEVSQSYSSYARTSIRASLTFF	960
Db	901	RKTVNVFPVEDBALGTAFAVQMPAHGLFPWCGLLDDTRTLEVSQSYSSYARTSIRASLTFF	960
QY	961	NRGFKAGRMNRKLFGLRLKCHSLFLLDQVNSLQTVCTNIYKILLQAYRPHACVQLQP	1020
Db	961	NRGFKAGRMNRKLFGLRLKCHSLFLLDQVNSLQTVCTNIYKILLQAYRPHACVQLQP	1020
QY	1021	PHQOVWKNPTFPLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQMLCHQAFLL	1080
Db	1021	PHQOVWKNPTFPLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQMLCHQAFLL	1080
QY	1081	KLTRHRVTYVPLGLSLRTAQQLSRKLPFGTTLTALAAAANPALPSDFKTILD	1132
Db	1081	KLTRHRVTYVPLGLSLRTAQQLSRKLPFGTTLTALAAAANPALPSDFKTILD	1132

RESULT 2
 ID AAW90251
 AC AAW90251;
 XX 24-MAY-1999 (first entry)
 XX Human catalytic telomerase sub-unit protein.
 KW Human: catalytic telomerase subunit; therapy; diagnosis; hTC; assay;
 KW modulator; treatment; inhibit; cellular disorder; death; defect; cancer;
 KW ageing; antisense; neoplastic cell; telomerase-related condition;
 KW tumour cell.
 XX Homo sapiens.
 OS WO9859040-A2.
 PN 30-DEC-1998.
 PD 09-JUN-1998; 98WO-EP003468.
 PF 20-JUN-1997; 97DE-01026329.
 PR 26-MAR-1998; 98DE-01013274.
 PR 14-APR-1998; 98DE-01016496.
 XX (FARB) BAYER AG.
 XX Hagen G, Siegmund H, Weichel W, Wick M, Zubov D;
 DR WPI; 1999-081276/07.
 DR N-PSDB; AAV72117.
 XX New catalytically active subunit of human telomerase - used in the
 PT modulation of telomerase activity, particularly for treating cancer and
 PT ageing.
 XX Claim 2; Fig 2; 76pp; German.
 XX This sequence represents a novel human catalytic telomerase sub-unit
 CC (hTC). This protein can be used in screening assays to identify
 CC modulators of telomerase and to treat or inhibit cellular disorders,
 CC death, defects and/or other pathological processes involving telomerase,
 CC particularly cancer and ageing (also suitable for this are agents that
 CC stimulate, inhibit or mimic the activity of the subunit). Antisense

CC nucleic acids inhibit telomerase action (by binding to specific mRNA),
CC particularly in neoplastic cells and may be expressed in vivo. Antibodies
CC and fragments of the protein, used as probes or primers, are used to
CC diagnose telomerase-related conditions (especially neoplasia) by (i)
CC detecting abnormal levels of the subunit protein in body fluids or
CC tissues or (ii) by measuring the amount of the encoding nucleic acid.
CC Expression of the nucleic acid encoding the subunit mRNA is confined to
CC tumour cells, in contrast to the ubiquitous expression of the telomerase
CC RNA subunit
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 2; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPCRVRSLLRSHYREVLPLATFVRLPGQWRLVORGDPAPAFRALVAOCLVCVPW 60
DB 1 MPRAPCRVRSLLRSHYREVLPLATFVRLPGQWRLVORGDPAPAFRALVAOCLVCVPW 60

QY 61 DARPPPAAPSFROVSCIKELVARVLQRLCERGAQNVLAFGALLDARGGPPPEAFTTSVR 120
DB 61 DARPPPAAPSFROVSCIKELVARVLQRLCERGAQNVLAFGALLDARGGPPPEAFTTSVR 120

QY 121 SYLPTNTVDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQCGPPLYQLGA 180
DB 121 SYLPTNTVDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQCGPPLYQLGA 180

QY 181 ATQARPPPHASGRRRLCERANHSVREAGVPLGLPAPGARRRGSASRSLLPDKRPRR 240
DB 181 ATQARPPPHASGRRRLCERANHSVREAGVPLGLPAPGARRRGSASRSLLPDKRPRR 240

QY 241 GAAPERPERTVPGQSWAHPORTGSDRGFCVVSPPARPAEATSLGALSGTRHSPSVG 300
DB 241 GAAPERPERTVPGQSWAHPORTGSDRGFCVVSPPARPAEATSLGALSGTRHSPSVG 300

QY 301 RQHAGPPSTSRPPRMDTCCPPVYATKHFLLSYSSGDKQLRPSFLSSLRPSLTGARLL 360
DB 301 RQHAGPPSTSRPPRMDTCCPPVYATKHFLLSYSSGDKQLRPSFLSSLRPSLTGARLL 360

QY 361 VETIFLGSRRPMTGTRRLRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLAAVT 420
DB 361 VETIFLGSRRPMTGTRRLRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLAAVT 420

QY 421 PAAGVCAREKPGQSWAAPBEDTDPRRLVOLLRHSSPMOVYGFVRACLRRLVPPGLWGS 480
DB 421 PAAGVCAREKPGQSWAAPBEDTDPRRLVOLLRHSSPMOVYGFVRACLRRLVPPGLWGS 480

QY 481 RHNERPLRNTKKFISLGHAKLSLQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
DB 481 RHNERPLRNTKKFISLGHAKLSLQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540

QY 541 LAKFLHWSVYVVELLSRFYTTETTFQKNRLFFYRKSWSKLQSIGIRQHUKRVOLRE 600
DB 541 LAKFLHWSVYVVELLSRFYTTETTFQKNRLFFYRKSWSKLQSIGIRQHUKRVOLRE 600

QY 601 LSAEVRQHREARPAALLTSRLRIPKPDGLRPIVNMDDYVVGARTFRREKAEARLTSRVKA 660
DB 601 LSAEVRQHREARPAALLTSRLRIPKPDGLRPIVNMDDYVVGARTFRREKAEARLTSRVKA 660

QY 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRQAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRQAQDPPPELYFVKVDVTGAYDTI 720

QY 721 PQDRLTEVIASIIKPONTYCVRYAVVQKAAGHVRKAFKSHVSTLTLDQPNRQFVAHL 780
DB 721 PQDRLTEVIASIIKPONTYCVRYAVVQKAAGHVRKAFKSHVSTLTLDQPNRQFVAHL 780

QY 781 QETSPLRDVAVIEQSSSLNEASSGLFDVFLRFCHHAVIRIGKSYVQCQIGIPGGSITSLT 840
DB 781 QETSPLRDVAVIEQSSSLNEASSGLFDVFLRFCHHAVIRIGKSYVQCQIGIPGGSITSLT 840

QY 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDVDFLLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900

DB 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDVDFLLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900

QY 901 RKTVMNPFVEDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVDSDSYSSYARTSRASLTFF 960

DB 901 RKTVMNPFVEDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVDSDSYSSYARTSRASLTFF 960

QY 961 NRGFKAGRNMRRLKFLGVLRLKCHSLFLDLQVNSLQTVCTNIYKILLIQAYRFHACVQLQP 1020

DB 961 NRGFKAGRNMRRLKFLGVLRLKCHSLFLDLQVNSLQTVCTNIYKILLIQAYRFHACVQLQP 1020

QY 1021 FHOQVWKNPTFFLURVSDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080

DB 1021 FHOQVWKNPTFFLURVSDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080

QY 1081 KLTRHRVTVYVPLLGSLRTAQTLRSRLPGTTLTALFAAANPALPSPDKTILD 1132

DB 1081 KLTRHRVTVYVPLLGSLRTAQTLRSRLPGTTLTALFAAANPALPSPDKTILD 1132

RESULT 3
AAV28881
ID AAY28881 standard; protein; 1132 AA.
XX
AC AAY28881;
XX AC
XX XX
DT 17-JAN-2000 (first entry)
XX
DE Human telomerase reverse transcriptase protein.
XX
KW Human telomerase reverse transcriptase protein; hTERT; telomerase; hEST2;
KW catalytic protein component; cell proliferative capacity; DNA primer;
KW telomerase substrate; telomeric DNA synthesis; cell immortality;
KW neoplastic phenotype; diagnostic application; prognostic application;
KW telomerase related condition; cancer; therapeutic agent;
KW telomerase expression; telomerase activity.
XX
OS Homo sapiens.
XX
XX
FH Key Location/Qualifiers
FT Misc-difference 608 /note= "Corresponds to cac codon"
FT
XX
PN WO950279-A1.
XX
PD 07-OCT-1999.
XX
PF 31-MAR-1999; 99WO-US007160.
XX
PR 31-MAR-1998; 98US-00052919.
XX
PA (GERO-) GERON CORP.
PA (UYTE-) UNIV TECHNOLOGY CORP.
XX
PI Cecch TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
XX Andrews WH;
XX WPI; 1999-610834/52.
DR N-PSDB; AA208150.
XX
PT Antisense polynucleotides for human telomerase reverse transcriptase used
PT for diagnosing or treating cancer.
XX
PS Claim 2; Fig 2; 31pp; English.
XX
CC The present sequence is human telomerase reverse transcriptase protein.
CC This is the catalytic protein component of telomerase and is also
CC referred to as hEST2. hTERT has the ability to extend a DNA primer that
CC functions as a telomerase substrate for telomeric DNA synthesis. This
CC correlates with cell proliferative capacity, cell immortality, and the
CC development of a neoplastic phenotype. Human TRT antisense
CC oligonucleotides are useful for diagnostic or prognostic applications to
CC telomerase related conditions, including cancer. They are also useful as

CC	therapeutic agents, for inhibition of telomerase expression and activity									
XX	Sequence 1132 AA;									
SQ	Query Match 100.0%; Score 5961; DB 2; Length 1132; Best Local Similarity 100.0%; Pred. No. 0; Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;									
QY	1	MPRAPRCRAVRSLSRSHYREVLPLATFVRRLLPGQWRLVORGDPAAAFRALVAQCILVCPW	60							
DB	1	MPRAPRCRAVRSLSRSHYREVLPLATFVRRLLPGQWRLVORGDPAAAFRALVAQCILVCPW	60							
QY	61	DARPPPAAPSRQVSCLEKELVARVLQRLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR	120							
DB	61	DARPPPAAPSRQVSCLEKELVARVLQRLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR	120							
QY	121	SYLNTVTDALRGSGAGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180							
DB	121	SYLNTVTDALRGSGAGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180							
QY	181	ATQARPPPHASGPRRLRCERAMNHSVREAGVPLGLPAGARRGGGSASLSLPLPKPRR	240							
DB	181	ATQARPPPHASGPRRLRCERAMNHSVREAGVPLGLPAGARRGGGSASLSLPLPKPRR	240							
QY	241	GAAPPERTPVQGSWAHPGTRGSDRGFCVSWPARPABEATSEALSGSTRHSHPSVG	300							
DB	241	GAAPPERTPVQGSWAHPGTRGSDRGFCVSWPARPABEATSEALSGSTRHSHPSVG	300							
QY	301	ROHAGPPSTSRPPRWDTPCPVYAEKHFYSSGDKQLRPSFLSSLRPSLTGARLL	360							
DB	301	ROHAGPPSTSRPPRWDTPCPVYAEKHFYSSGDKQLRPSFLSSLRPSLTGARLL	360							
QY	361	VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELIGNHAQCPYGVLLKTHCPLRAAVT	420							
DB	361	VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELIGNHAQCPYGVLLKTHCPLRAAVT	420							
QY	421	PAAGVCAREPQGSVAAPBEDDTPRLVQLLRQHSSPMQVYGFVRACLRRLVPPGLWGS	480							
DB	421	PAAGVCAREPQGSVAAPBEDDTPRLVQLLRQHSSPMQVYGFVRACLRRLVPPGLWGS	480							
QY	481	RHNERRLNTKFIISLGKAKLSLOELTWKMSVRDCAWLRSPGVGCVPAABHRLREI	540							
DB	481	RHNERRLNTKFIISLGKAKLSLOELTWKMSVRDCAWLRSPGVGCVPAABHRLREI	540							
QY	541	LAKFLHLMMSVYVELLSRPFYVTTTFQKNRFFYRKSWSKLQSIGIRQHLKRVQRE	600							
DB	541	LAKFLHLMMSVYVELLSRPFYVTTTFQKNRFFYRKSWSKLQSIGIRQHLKRVQRE	600							
QY	601	LSEAEVROHREARPAALLTSRLRPIPKDGLRPIVNMVYVVGARTFREKRAERLTSRVKA	660							
DB	601	LSEAEVROHREARPAALLTSRLRPIPKDGLRPIVNMVYVVGARTFREKRAERLTSRVKA	660							
QY	661	LFSVLNVERARRPGLLGASVLGLDDTHRAWRFTVLVRAQDPPPELYFVKVDVTGAYDTI	720							
DB	661	LFSVLNVERARRPGLLGASVLGLDDTHRAWRFTVLVRAQDPPPELYFVKVDVTGAYDTI	720							
QY	721	PODLTEVIAIIPKQNTYCVRYAYVQAAHGHVKAFKSHVSTLTDLOPTMRQFVAHL	780							
DB	721	PODLTEVIAIIPKQNTYCVRYAYVQAAHGHVKAFKSHVSTLTDLOPTMRQFVAHL	780							
QY	781	QETSPLRDVAVIEQSSSLEASGLFDVFLRPMCHHAVIRKSVYQCGIPQGSILSTL	840							
DB	781	QETSPLRDVAVIEQSSSLEASGLFDVFLRPMCHHAVIRKSVYQCGIPQGSILSTL	840							
QY	841	LCSLCYGDMMENKLFAGIRGDLGLLRVDDFLVTPHLLTHAKTFLRLTVRGVPEYCCVNL	900							
DB	841	LCSLCYGDMMENKLFAGIRGDLGLLRVDDFLVTPHLLTHAKTFLRLTVRGVPEYCCVNL	900							
QY	901	RKTUVNFPVEDEALGCTAFVQMPAGLFPWCGLLDDTRTLEVSQSYSSYARTSIRASLTF	960							
DB	901	RKTUVNFPVEDEALGCTAFVQMPAGLFPWCGLLDDTRTLEVSQSYSSYARTSIRASLTF	960							
QY	961	NRGFKAGRNMRKLFVGLRLKCHSLFLDLQVNSLQVTCVTNIYKILLQAYRFHACVLQLP	1020							

DB	961	NRGFKAGRNMRKLFVGLRLKCHSLFLDLQVNSLQVTCVTNIYKILLQAYRFHACVLQLP	1020							
QY	1021	FHQVWKNTFFLRVISTASLCYSILKAKNAGMSLGAKAAGPLPSEAVQWLCHOAFTLL	1080							
DB	1021	FHQVWKNTFFLRVISTASLCYSILKAKNAGMSLGAKAAGPLPSEAVQWLCHOAFTLL	1080							
QY	1081	KLTHRRVTVPVLLGSLRTAQTQLSRKLPQTTLTALEAANPALPSDFKTLTD	1132							
DB	1081	KLTHRRVTVPVLLGSLRTAQTQLSRKLPQTTLTALEAANPALPSDFKTLTD	1132							

RESULT 4
AAY32090
ID AAY32090 standard; protein; 1132 AA.
XX
AC AAY32090;
XX
DT 17-JAN-2000 (first entry)
XX
DE Human telomerase reverse transcriptase (hTERT).
XX
KW Telomerase reverse transcriptase; human; hTERT; cell proliferation;
KW cancer.
XX
OS Homo sapiens.
XX
PN WO950386-A2.
XX
PD 07-OCT-1999.
XX
PF 31-MAR-1999; 99WO-US007097.
XX
PR 31-MAR-1998; 98US-00052864.
PR 03-AUG-1998; 98US-00128354.
XX
PA (GERO-) GERON CORP.
XX
PI Morin GB;
XX
DR WPI; 1999-610842/52.
DR N-PSDB; AAZ20279.
XX
PT New catalytic polypeptide and polynucleotide, useful for increasing
PT catalytic activity in a cell.
XX
PS Claim 13; Fig 1; 24pp; English.

The present sequence represents human telomerase reverse transcriptase (hTERT). Human telomerase is a target for diagnosing and treating diseases relating to cell proliferation and senescence, such as cancer, or for increasing the proliferative capacity of a cell. A claimed method for increasing the proliferative capacity of a vertebrate cell, especially a human or other mammalian cell, involves introducing into the cell a recombinant hTERT polynucleotide encoding an hTERT variant in which residues 192-323, 200-323, 192-271, 200-271, 222-240, 415-450, 192-323 and 415-450, or 192-271 and 415-450 of the present sequence are deleted. A claimed method of preparing recombinant telomerase involves contacting a recombinant hTERT deletion mutant (as above) with a telomerase RNA component such that the 2 proteins associate to form a complex capable of catalysing the addition of nucleotides to a telomerase substrate. A claimed method for reducing telomerase activity in a cell involves introducing a recombinant polynucleotide encoding an hTERT variant having a deletion of amino acids 192-450, 560-565, 637-660, 748-764 or 1055-1071 of the present sequence

SQ Sequence 1132 AA;
Query Match 100.0%; Score 5961; DB 2; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSLSRSHYREVLPLATFVRRLLPGQWRLVORGDPAAAFRALVAQCILVCPW 60

Db 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAPRALVAOCLVCVPW 60
QY 61 DARPPPAAPSFQVSCLELVARVQLQRCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
Db 61 DARPPPAAPSFQVSCLELVARVQLQRCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
QY 121 SYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 121 SYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
QY 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGLPAGCARRRGGSASRLPLKPRR 240
Db 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGLPAGCARRRGGSASRLPLKPRR 240
QY 241 GAAPPEPERTVPGGSAWHPQRTGSDRGFCVVSAPPAEATSLGALSCTHRHSPSVG 300
Db 241 GAAPPEPERTVPGGSAWHPQRTGSDRGFCVVSAPPAEATSLGALSCTHRHSPSVG 300
QY 301 RQHAGPPSTSPRPMDTPCPVYATKHFLYSSGDKQLRPSFLSSLRPSLTGARRL 360
Db 301 RQHAGPPSTSPRPMDTPCPVYATKHFLYSSGDKQLRPSFLSSLRPSLTGARRL 360
QY 361 VETIFLGSRPWPGTFRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPWPGTFRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
QY 421 PAAGVCAREKPOQSVAAPBEEDTPRRLVOLLRHSSPMOVYGFVRACLRLRVPGLWGS 480
Db 421 PAAGVCAREKPOQSVAAPBEEDTPRRLVOLLRHSSPMOVYGFVRACLRLRVPGLWGS 480
QY 481 RHNERFLRNTKFI SLGKHAKLSLQELTWKMSVRDCAWLRRSPGVGCPAAEHLREEI 540
Db 481 RHNERFLRNTKFI SLGKHAKLSLQELTWKMSVRDCAWLRRSPGVGCPAAEHLREEI 540
QY 541 LAKFLHNLMSVYVELLSRPFYTTETTFQKNRLFYRKSWKLSQSIGIRQHLKRVQLRE 600
Db 541 LAKFLHNLMSVYVELLSRPFYTTETTFQKNRLFYRKSWKLSQSIGIRQHLKRVQLRE 600
QY 601 LSAEVRQHEARPAALLTSRLRIFPKPDGLRPIVNMDDYVVGARTFRREKRAELTSRVKA 660
Db 601 LSAEVRQHEARPAALLTSRLRIFPKPDGLRPIVNMDDYVVGARTFRREKRAELTSRVKA 660
QY 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRVRAQDPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRVRAQDPPPELYFVKVDVTGAYDTI 720
QY 721 PQDLRTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
Db 721 PQDLRTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
QY 781 QETSPLRDVAVVIQSSSLNEASSGLPDVFLRPFCHHRAVIRGKSYVQCQIGIPGSSILSTL 840
Db 781 QETSPLRDVAVVIQSSSLNEASSGLPDVFLRPFCHHRAVIRGKSYVQCQIGIPGSSILSTL 840
QY 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRLTVRGVPEYGCVVNL 900
Db 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRLTVRGVPEYGCVVNL 900
QY 901 RKTVMNPFVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVOQSDYSYVARTSIRASLTF 960
Db 901 RKTVMNPFVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVOQSDYSYVARTSIRASLTF 960
QY 961 NRGFKAGNRMRKLFGLVRLKCHSLFDLDQVNSLQVTCNIIYKILLQAFRHACVLQLP 1020
Db 961 NRGFKAGNRMRKLFGLVRLKCHSLFDLDQVNSLQVTCNIIYKILLQAFRHACVLQLP 1020
QY 1021 FHOQVKNPFFLRVISTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWILCHOAFLI 1080
Db 1021 FHOQVKNPFFLRVISTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWILCHOAFLI 1080
QY 1081 KLTRHRVTVYVPLLGSLRTAQQLSRKLPCTTLTALEAAANPALPSPDKTILD 1132

Db 1081 KLTRHRVTVYVPLLGSLRTAQQLSRKLPCTTLTALEAAANPALPSPDKTILD 1132
RESULT 5
AAV43621
ID AAY43621 standard; protein; 1132 AA.
XX AAY43621;
AC AAY43621;
XX 26-JAN-2000 (first entry)
XX A human telomerase reverse transcriptase (TRT) polypeptide.
DE Human; telomerase reverse transcriptase; TRF; T lymphocyte activation;
KW dendritic cell; telomerase activity; cancer cell; proliferating cell;
XX immunological destruction; telomerase; cancer; proliferation disease.
OS Homo sapiens.
XX MO9950392-A1.
XX 07-OCT-1999.
XX 30-MAR-1999; 99WO-US006898.
XX 31-MAR-1998; 98US-0112006P.
XX (GERO-) GERON CORP.
XX Gaeta FCA;
XX WPI; 1999-610845/52.
DR N-PSDB; AA230154.
XX Eliciting an in vivo immune response for prevention and treatment of
PT cancers.
XX Claim 3; Fig 1; 26pp; English.
XX The present sequence represents a human telomerase reverse transcriptase
CC (TRT) polypeptide. The protein is used in the method of the invention.
CC The specification describes a method for activating a T lymphocyte,
CC comprising contacting the T lymphocyte with a dendritic cell that
CC expresses a TRT peptide in the context of a MHC class I or MHC class II
CC molecule. The protein causes induction of an in vivo immunological
CC response to telomerase activity. Cancer cells are characterized by
CC expression of endogenous TRT gene and the presence of detectable
CC telomerase activity. Therefore, by eliciting a specific immune response
CC to TRT or to TRT-expressing cells, it is possible to selectively target
CC proliferating cells for immunological destruction. The method is used for
CC eliciting an in vivo immune response to telomerase by activating a T
CC lymphocyte, and is useful for prevention and treatment of cancers and
CC other proliferation diseases/conditions
SQ Sequence 1132 AA;
Query Match 100.0%; Score 5961; DB 2; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAPRALVAOCLVCVPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAPRALVAOCLVCVPW 60
QY 61 DARPPPAAPSFQVSCLELVARVQLQRCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
Db 61 DARPPPAAPSFQVSCLELVARVQLQRCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
QY 121 SYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 121 SYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
QY 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGLPAGCARRRGGSASRLPLKPRR 240

Db 181 ATQARPPHAGSPRRRLGCRAMHNSVREAGVPLGLPAPGARRGGASRSLPLPKRPR 240
Qy 241 GAAPEPERTVPGGSGWAHPGRTGSPDRGFCVVSPPARPAEATSLGALSGTRHSPSVG 300
Db 241 GAAPEPERTVPGGSGWAHPGRTGSPDRGFCVVSPPARPAEATSLGALSGTRHSPSVG 300
Qy 301 ROHAGPPTSRRPRPMDTFCPPVYAEKHFLLSYSGDKEQLRPSFLLSSLRPSLTGARRL 360
Db 301 ROHAGPPTSRRPRPMDTFCPPVYAEKHFLLSYSGDKEQLRPSFLLSSLRPSLTGARRL 360
Qy 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
Db 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
Qy 421 PAAGVCAREKPOGSVAAPPEEDTPRRLVQLLRQHSPPWQVYGFVRACLRLVPPGLWGS 480
Db 421 PAAGVCAREKPOGSVAAPPEEDTPRRLVQLLRQHSPPWQVYGFVRACLRLVPPGLWGS 480
Qy 481 RHNERRFLRNTKXIFSLGKIAKLSLOBLTWKMSVRDCAWLRSPGVGCVPAAEHRLREI 540
Db 481 RHNERRFLRNTKXIFSLGKIAKLSLOBLTWKMSVRDCAWLRSPGVGCVPAAEHRLREI 540
Qy 541 LAKFLHLMMSVYVVELLSRFFYTETTFQKNRLFYFKKSVWSKLQSIGIRQHLLKRVOLRE 600
Db 541 LAKFLHLMMSVYVVELLSRFFYTETTFQKNRLFYFKKSVWSKLQSIGIRQHLLKRVOLRE 600
Qy 601 LSAEVRQREARPAALLTSRLRIFPKDGLRPIVNDYVVGARTFRREKRAELTSRVKA 660
Db 601 LSAEVRQREARPAALLTSRLRIFPKDGLRPIVNDYVVGARTFRREKRAELTSRVKA 660
Qy 661 LFSVLNVERARRPGLLGASVLGDDIHRAMRTFVLRAQDPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGDDIHRAMRTFVLRAQDPPPELYFVKVDVTGAYDTI 720
Qy 721 PQDLTEVIASIIKPONTYCVRYAVVQAAHGHVKAFFKSHVSTLTDLPYMRQFVAHL 780
Db 721 PQDLTEVIASIIKPONTYCVRYAVVQAAHGHVKAFFKSHVSTLTDLPYMRQFVAHL 780
Qy 781 QETSPLRDAVVIQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYOCOGIQQGSTLSTL 840
Db 781 QETSPLRDAVVIQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYOCOGIQQGSTLSTL 840
Qy 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRTLVRGVPEYGCVNL 900
Db 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRTLVRGVPEYGCVNL 900
Qy 901 RKTVMNPFVEDEALGTAQVOMPAGLFPWCGLLDTRILEVQSDYSSYARTSIRASLTF 960
Db 901 RKTVMNPFVEDEALGTAQVOMPAGLFPWCGLLDTRILEVQSDYSSYARTSIRASLTF 960
Qy 961 NRGFKAGRNNRKLFGVLRKCHSLFDLDQVNSLQVCTNIYKILLQAYRFHACVQLP 1020
Db 961 NRGFKAGRNNRKLFGVLRKCHSLFDLDQVNSLQVCTNIYKILLQAYRFHACVQLP 1020
Qy 1021 FHOQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVOMLCHQAFLL 1080
Db 1021 FHOQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVOMLCHQAFLL 1080
Qy 1081 KLTRHRVTVPVLIGSLRTAQTLRSKLPCTTLTALEAANPALPSDFKTLTD 1132
Db 1081 KLTRHRVTVPVLIGSLRTAQTLRSKLPCTTLTALEAANPALPSDFKTLTD 1132

RESULT 6
ID AAY26580
XX AAY26580 standard; protein; 1132 AA.
AC AAY26580;
XX
DT 13-SEP-1999 (first entry)
XX
DE Human telomerase reverse transcriptase (hTERT) enzyme.

XX Telomerase reverse transcriptase: TERT; mouse; telomere length assay;
KW immunogen; enzyme; telomerase-mediated DNA replication; human.
XX Homo sapiens.
PN WO927113-A1.
PD 03-JUN-1999.
XX 25-NOV-1998; 98WO-US025211.
PR 26-NOV-1997; 97US-00979742.
PR 16-MAR-1998; 98US-00042460.
XX (GERO-) GERON CORP.
PA (YESH) UNIV YESHIVA EINSTEIN COLLEGE.
XX Morin GB, Allsopp R, Depinho R, Greenberg R;
PI WPI; 1999-347722/29.
XX Mouse telomerase reverse transcriptase (mTERT) enzyme proteins and
PT nucleic acids.
XX Disclosure; Fig 3; 135pp; English.
CC The invention relates to a mouse telomerase reverse transcriptase (mTERT)
CC enzyme. Compositions containing mTERT can be used in telomere length
CC assays. Isolated mTERT is useful as an immunogen for the production of
CC monoclonal or polyclonal antibodies. The method is useful for assessing
CC the degree of purification and identification of new mTERT species, such
CC as an mTERT allele, homolog or isoform, or to screen for modulators
CC (antagonists and agonists) of telomerase-mediated DNA replication.
CC Antagonists and agonists of mTERT can be used to modify the activity of
CC other telomerase enzymes such as human TERT (hTERT). The present sequence
CC represents a human TERT enzyme
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 2; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MPAPRCRAVSLRSHYREVLPATFVRRLGPOGWRVLVQRGDPAAFALVAQCLVCVPM 60
Db 1 MPAPRCRAVSLRSHYREVLPATFVRRLGPOGWRVLVQRGDPAAFALVAQCLVCVPM 60
Qy 61 DARPPPAAPSPQVSCLEKELVARVLQRLCERGAKNVLAFFGALLDGGARGGPEAFTTSVR 120
Db 61 DARPPPAAPSPQVSCLEKELVARVLQRLCERGAKNVLAFFGALLDGGARGGPEAFTTSVR 120
Qy 121 SYLPTNTVDALRGSGAWGLLLRRVDDVILVHLLARCALFVLVAPSCAYQVCGPPYQLGA 180
Db 121 SYLPTNTVDALRGSGAWGLLLRRVDDVILVHLLARCALFVLVAPSCAYQVCGPPYQLGA 180
Qy 181 ATQARPPHAGSPRRRLGCRAMHNSVREAGVPLGLPAPGARRGGASRSLPLPKRPRR 240
Db 181 ATQARPPHAGSPRRRLGCRAMHNSVREAGVPLGLPAPGARRGGASRSLPLPKRPRR 240
Qy 241 GAAPEPERTVPGGSGWAHPGRTGSPDRGFCVVSPPARPAEATSLGALSGTRHSPSVG 300
Db 241 GAAPEPERTVPGGSGWAHPGRTGSPDRGFCVVSPPARPAEATSLGALSGTRHSPSVG 300
Qy 301 ROHAGPPTSRRPRPMDTFCPPVYAEKHFLLSYSGDKEQLRPSFLLSSLRPSLTGARRL 360
Db 301 ROHAGPPTSRRPRPMDTFCPPVYAEKHFLLSYSGDKEQLRPSFLLSSLRPSLTGARRL 360
Qy 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
Db 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
Qy 421 PAAGVCAREKPOGSVAAPPEEDTPRRLVQLLRQHSPPWQVYGFVRACLRLVPPGLWGS 480

Db 421 PAAGVCAREKPGQSSVAAPPEEEDTDPRLVQLLRQHSSPWQYGFVRACTLRRLVPPGLWGS 480
Qy 481 RHNERRFLRNTKFIISLGKIAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLEEEI 540
Db 481 RHNERRFLRNTKFIISLGKIAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLEEEI 540
Qy 541 LAKFLHLMMSVYVVELLSRFFYVTTTFQKNRLFYFYSKSVMSKLSQSIGIRQHLLKRVOLRE 600
Db 541 LAKFLHLMMSVYVVELLSRFFYVTTTFQKNRLFYFYSKSVMSKLSQSIGIRQHLLKRVOLRE 600
Qy 601 LSAEVRQREARPAALLTSRLRPIKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA 660
Db 601 LSAEVRQREARPAALLTSRLRPIKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA 660
Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELFFVVDVVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELFFVVDVVTGAYDTI 720
Qy 721 PQDLRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
Db 721 PQDLRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
Qy 781 QETSPDLADAVIQQSSINASSGLFDVFLRPMCHHVRIRGKSYVQCQIGIPQGSILSTL 840
Db 781 QETSPDLADAVIQQSSINASSGLFDVFLRPMCHHVRIRGKSYVQCQIGIPQGSILSTL 840
Qy 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFILRTLVRGVPYEGCVVNL 900
Db 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFILRTLVRGVPYEGCVVNL 900
Qy 901 RKTVMNPPVDEALGCTAFVQMPAHGLFPMCGLLDTRTLEVSQDYSSYARTSIRASLTF 960
Db 901 RKTVMNPPVDEALGCTAFVQMPAHGLFPMCGLLDTRTLEVSQDYSSYARTSIRASLTF 960
Qy 961 NRGFKAGRNMRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
Db 961 NRGFKAGRNMRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
Qy 1021 FHOQVKNPTFFLRVSDTASLCYSILKAKNAGMSLGAKGAAGPLSEAVQWLCHOAFL 1080
Db 1021 FHOQVKNPTFFLRVSDTASLCYSILKAKNAGMSLGAKGAAGPLSEAVQWLCHOAFL 1080
Qy 1081 KLTRHRVTVYVPLLGSLRTAQTQLSRKLPGLTTLTALEAANPALPSDPKTIID 1132
Db 1081 KLTRHRVTVYVPLLGSLRTAQTQLSRKLPGLTTLTALEAANPALPSDPKTIID 1132

RESULT 7
ID AAG64859 standard; protein; 1132 AA.
XX AAG64859;
AC AAG64859;
XX
DT 21-SEP-2001 (first entry)
XX
DE Heart muscle cell differentiation related protein SEQ ID NO: 31.
XX
KW Heart muscle cell; human; cell differentiation; heart disease.
XX
OS Homo sapiens.
XX
PN WD200148151-A1.
XX
PD 05-JUL-2001.
XX
PF 27-DEC-2000; 2000WO-JP009323.
XX
PR 28-DEC-1999; 99JP-00372826.
PR 28-FEB-2000; 2000WO-JP001148.
PR 02-NOV-2000; 2000WO-JP007741.
XX
PA (KYOW) KYOWA HAKKO KOGYO KK.

XX Umezawa A, Hata J, Fukuda K, Ogawa S, Sakurada K, Gojo S;
PI Yamada Y;
XX
DR WPI; 2001-425656/45.
DR N-PSDB; ANH48235.
XX
PT Cells capable of differentiating into cardiomyocytes and originating in
PT bone marrow or umbilical blood cells for study of cardiomyocyte
PT differentiation and treatment of heart disease.
XX
PS Claim 87; Page 143-147; 183pp; Japanese.
XX
CC The present invention provides cells originating in the human bone marrow
CC or umbilical blood cells which are capable of differentiating into
CC cardiomyocytes. These cells are useful in the treatment of diseases
CC involving heart muscle degeneration, such as myocardial infarction, and
CC the study of cardiomyocyte differentiation. The present sequence is a
CC protein described in the exemplification of the invention
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 4; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVORGPAPAFRALVAOCLVCVPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVORGPAPAFRALVAOCLVCVPW 60
Qy 61 DARPPPAASFRQVSCLELVARVQLRCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120
Db 61 DARPPPAASFRQVSCLELVARVQLRCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120
Qy 121 SYLPTVTDALRGSGGAWGLLRVDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 121 SYLPTVTDALRGSGGAWGLLRVDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Qy 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAGARRRRGGSASRLPLPKPRRR 240
Db 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAGARRRRGGSASRLPLPKPRRR 240
Qy 241 GAAPEPERTPVGQGSWAHPGTRGSDRGFCVVS PARPAEATSLGALSGLSRHSHPVS 300
Db 241 GAAPEPERTPVGQGSWAHPGTRGSDRGFCVVS PARPAEATSLGALSGLSRHSHPVS 300
Qy 301 RQHAGPPSTSRPRPMDTPCPVYAEKHFYSSGDKQELRPSFLLSLRPSLTGARRL 360
Db 301 RQHAGPPSTSRPRPMDTPCPVYAEKHFYSSGDKQELRPSFLLSLRPSLTGARRL 360
Qy 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAOCYPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAOCYPYGVLLKTHCPLRAAVT 420
Qy 421 PAAGVCAREKPGQSSVAAPPEEEDTDPRLVQLLRQHSSPWQYGFVRACTLRRLVPPGLWGS 480
Db 421 PAAGVCAREKPGQSSVAAPPEEEDTDPRLVQLLRQHSSPWQYGFVRACTLRRLVPPGLWGS 480
Qy 481 RHNERRFLRNTKFIISLGKIAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLEEEI 540
Db 481 RHNERRFLRNTKFIISLGKIAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLEEEI 540
Qy 541 LAKFLHLMMSVYVVELLSRFFYVTTTFQKNRLFYFYSKSVMSKLSQSIGIRQHLLKRVOLRE 600
Db 541 LAKFLHLMMSVYVVELLSRFFYVTTTFQKNRLFYFYSKSVMSKLSQSIGIRQHLLKRVOLRE 600
Qy 601 LSAEVRQREARPAALLTSRLRPIKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA 660
Db 601 LSAEVRQREARPAALLTSRLRPIKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA 660
Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELFFVVDVVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELFFVVDVVTGAYDTI 720

QY 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQAAAHGHRKAFKSHVSTLTLDLPYMRQFVAHL 780
DB 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQAAAHGHRKAFKSHVSTLTLDLPYMRQFVAHL 780
QY 781 QETSPLRDAVIEQSSSINEASSGLFDVFLRFMCHHAVIRGKSYVQCQIGIPOGSIILSTL 840
DB 781 QETSPLRDAVIEQSSSINEASSGLFDVFLRFMCHHAVIRGKSYVQCQIGIPOGSIILSTL 840
QY 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRTLVRGVPEYGCVVNL 900
DB 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRTLVRGVPEYGCVVNL 900
QY 901 RKTVVNFPVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSDYSYARTSTRASLTF 960
DB 901 RKTVVNFPVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSDYSYARTSTRASLTF 960
QY 961 NRGFKAGNNRRKLFGLVRLKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
DB 961 NRGFKAGNNRRKLFGLVRLKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
QY 1021 FHOQWKNPTFFLRVSDTASLCYSILKAKNAGSLGAKGAAGPLPSEAVQWLCHOAFL 1080
DB 1021 FHOQWKNPTFFLRVSDTASLCYSILKAKNAGSLGAKGAAGPLPSEAVQWLCHOAFL 1080
QY 1081 KLTRHRVTVYVPLGLSLRTAQTLRSKLPGTTLTALEAAANPALPSPDKTILD 1132
DB 1081 KLTRHRVTVYVPLGLSLRTAQTLRSKLPGTTLTALEAAANPALPSPDKTILD 1132

RESULT 8

AAG64329
ID AAG64329 standard; protein; 1132 AA.
XX
AC AAG64329;
XX
DT 24-SEP-2001 (first entry)
XX
DE Human protein #2.
XX
KW Angiogenesis; cardiant; cell differentiating agent; bone marrow;
KW heart muscle cell; heart disease; human.
XX
OS Homo sapiens.
XX
PN WO200148149-A1.
XX
PP 05-JUL-2001.
XX
PF 28-FEB-2000; 2000WO-JP001148.
XX
PR 28-DEC-1999; 99JP-00372826.
XX
PA (KYOW) KYOWA HAKKO KOGYO KK.
XX
PI Umezawa A, Hata J, Fukuda K, Ogawa S, Sakurada K;
XX
DR WPI; 2001-418252/44.
DR N-PSDB; AAH49601.
XX
PT New adult bone marrow-originated cells capable of differentiating into
PT heart muscle cells, applicable as remedies for various heart diseases
PT particularly with damaged heart muscle accompanying degeneration.
XX
PS Disclosure; Page 128-134; 158pp; Japanese.
XX
CC The present invention relates to cells isolated from bone marrow, which
CC are capable of at least differentiating into heart muscle cells. The
CC cells are applicable as remedies for various heart diseases particularly
CC with damaged heart muscle accompanying degeneration. The present sequence
CC was used to illustrate the present invention
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 4; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPCRVAIRSLRSHYREVLPATFVRRLPQGRVLRVORGDPAAFRALVAQCLVCVPM 60
DB 1 MPRAPCRVAIRSLRSHYREVLPATFVRRLPQGRVLRVORGDPAAFRALVAQCLVCVPM 60
QY 61 DARPPAAPSPQVSCLEKELVARVLQRLCERCAKNVLAFFGALLDGAAGGPEAFTTSVR 120
DB 61 DARPPAAPSPQVSCLEKELVARVLQRLCERCAKNVLAFFGALLDGAAGGPEAFTTSVR 120
QY 121 SYLPTNTVDALRGSAWGLLLRRVGDVLLVHLLARCALFVLVAPSCAYQVCGPPYQLGA 180
DB 121 SYLPTNTVDALRGSAWGLLLRRVGDVLLVHLLARCALFVLVAPSCAYQVCGPPYQLGA 180
QY 181 ATQARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAGARRRGSSASRSLLPKRPRR 240
DB 181 ATQARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAGARRRGSSASRSLLPKRPRR 240
QY 241 GAAPPERTPVQGSWAHPGRTGRGFCVSPARPAEABATSLEGALSGTRHSHPSVG 300
DB 241 GAAPPERTPVQGSWAHPGRTGRGFCVSPARPAEABATSLEGALSGTRHSHPSVG 300
QY 301 RQHAGPSTSRPPRPMDTPCPVVAETKHFLYSSGDKQLRPSFLSSLPSTGARRL 360
DB 301 RQHAGPSTSRPPRPMDTPCPVVAETKHFLYSSGDKQLRPSFLSSLPSTGARRL 360
QY 361 VETIFLGSRRPMPGTPRRLPRLPORYWOMRPLFLELLGNHQAQCPVGLLTKHCPRAAVT 420
DB 361 VETIFLGSRRPMPGTPRRLPRLPORYWOMRPLFLELLGNHQAQCPVGLLTKHCPRAAVT 420
QY 421 PAAGVCAREKPGQSVAAPEEDTDPRLVQLLRQHSSPWQYVGFVRACLRLRPFLPGLWGS 480
DB 421 PAAGVCAREKPGQSVAAPEEDTDPRLVQLLRQHSSPWQYVGFVRACLRLRPFLPGLWGS 480
QY 481 RHNERRRFLRNTKFTSLGKHAKLSLOELTWKMSVRDCAWLRSPGVGCVPAAEHRLREEI 540
DB 481 RHNERRRFLRNTKFTSLGKHAKLSLOELTWKMSVRDCAWLRSPGVGCVPAAEHRLREEI 540
QY 541 LAKFLHMLMSYVYVVELLRSFFYVTTTFOKNRLFYFKSVMSKLSQIGIROHLKRVQURE 600
DB 541 LAKFLHMLMSYVYVVELLRSFFYVTTTFOKNRLFYFKSVMSKLSQIGIROHLKRVQURE 600
QY 601 LSEAEVRQHREARPAALLTSRLRFPKPDGLRPIVNDYVVGARTFREKRAERLTSRVKA 660
DB 601 LSEAEVRQHREARPAALLTSRLRFPKPDGLRPIVNDYVVGARTFREKRAERLTSRVKA 660
QY 661 LFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLVRAODPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLVRAODPPPELYFVKVDVTGAYDTI 720
QY 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQAAAHGHRKAFKSHVSTLTLDLPYMRQFVAHL 780
DB 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQAAAHGHRKAFKSHVSTLTLDLPYMRQFVAHL 780
QY 781 QETSPLRDAVIEQSSSINEASSGLFDVFLRFMCHHAVIRGKSYVQCQIGIPOGSIILSTL 840
DB 781 QETSPLRDAVIEQSSSINEASSGLFDVFLRFMCHHAVIRGKSYVQCQIGIPOGSIILSTL 840
QY 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRTLVRGVPEYGCVVNL 900
DB 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRTLVRGVPEYGCVVNL 900
QY 901 RKTVVNFPVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSDYSYARTSTRASLTF 960
DB 901 RKTVVNFPVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSDYSYARTSTRASLTF 960
QY 961 NRGFKAGNNRRKLFGLVRLKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
DB 961 NRGFKAGNNRRKLFGLVRLKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020

QY 1021 FHQVWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKGAAAGPLPSEAVQWVCHQAFLL 1080
Db 1021 FHQVWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKGAAAGPLPSEAVQWVCHQAFLL 1080
QY 1081 KLTRHRVTVYVPLGSLRTAQTLQSRKLPGTTLTALEAAANPALPSPDKTILD 1132
Db 1081 KLTRHRVTVYVPLGSLRTAQTLQSRKLPGTTLTALEAAANPALPSPDKTILD 1132
RESULT 9
AAB99930
ID AAB99930 standard; protein; 1132 AA.
XX AAB99930;
AC AAB99930;
DT 26-SEP-2001 (first entry)
XX Human telomerase protein sequence SEQ ID NO:31.
DE
XX
KW Differentiation; heart muscle cell; cytokine; transcription factor;
KW proliferation; surface antigen; heart disease; cardiomyocyte;
KW bone marrow; umbilical blood cell; heart muscle degeneration;
KW myocardial infarction.
XX
OS Homo sapiens.
XX
PN WO200148150-A1.
PD 05-JUL-2001.
XX
PF 02-NOV-2000; 2000WO-JP007741.
XX
PR 28-DEC-1999; 99JP-00372826.
PR 28-FEB-2000; 2000WO-JP001148.
XX
XX (KYOW) KYOWA HAKKO KOGYO KK.
PA
XX
PI Umezawa A, Hata J, Fukuda K, Ogawa S, Sakurada K, Gojo S;
PI Yamaoka Y;
XX
XX WPI; 2001-425655/45.
DR N-PSDB; AAH44366.
XX
XX
PT Cells capable of differentiating into cardiomyocytes and originating in
PT bone marrow or umbilical blood cells for study of cardiomyocyte
PT differentiation and treatment of heart disease.
XX
XX Claim 146; Page 137-141; 187pp; Japanese.
XX
CC The present invention describes cells originating in bone marrow or
CC umbilical blood cells which are capable of differentiating into
CC cardiomyocytes. Also described are: (1) cardiomyocytes produced by the
CC differentiation of the cells; (2) a method for carrying out the
CC differentiation into cardiomyocytes, regulated by a promotional and/or
CC inhibitory factor; (3) a method for the differentiation of the cells into
CC cell types other than cardiomyocytes; (4) drug compositions promoting the
CC formation of heart muscle and regeneration of heart tissue which contain
CC the cells; (5) a method for the production of antibodies which recognise
CC the cells, especially antibodies which recognise a surface antigen on the
CC cells; (6) a method for screening factors which promote the proliferation
CC of the cells; (7) a method for immortalising the cells by expressing
CC telomerase in them; (8) drug compositions for the treatment of heart
CC disease which contain the immortalised cells; and (9) cell-free
CC supernatant from the culture of the cells and its use in promoting their
CC differentiation into cardiomyocytes. The cells are used in the treatment
CC of diseases involving heart muscle degeneration, such as myocardial
CC infarction and in the study of cardiomyocyte differentiation. AAH44351 to
CC AAH44409 and AAB99915 to AAB99935 represent sequences used in the
CC exemplification of the present invention
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 4; Length 1132;

Best Local Similarity 100.0%; Pred. No. 0; Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRRLGQGWRLVQRGDPAAFRALVAOCLVCVPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRRLGQGWRLVQRGDPAAFRALVAOCLVCVPW 60
QY 61 DARPPPAAPSPRQVSCLELVARVLQRLCERGAKNVLAFGFALLDGAAGPPPEAFTTSVR 120
Db 61 DARPPPAAPSPRQVSCLELVARVLQRLCERGAKNVLAFGFALLDGAAGPPPEAFTTSVR 120
QY 121 SYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
Db 121 SYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
QY 181 ATOARPPPHASGPRRRRLGCERAWNHSVREAGVPLGLPAPGARRRRGSASRSLPLPKRPRR 240
Db 181 ATOARPPPHASGPRRRRLGCERAWNHSVREAGVPLGLPAPGARRRRGSASRSLPLPKRPRR 240
QY 241 GAAPEPERTPVGQGSWAHFGRTGRGSDRGFCVVSPARPAEEATSLGALSGRHSHPSVG 300
Db 241 GAAPEPERTPVGQGSWAHFGRTGRGSDRGFCVVSPARPAEEATSLGALSGRHSHPSVG 300
QY 301 ROHHAGPPSTSRPPRPWDTPCPPVYAEATHFLYSSGDKEQLRPSFLSSLRPSLTGARRL 360
Db 301 ROHHAGPPSTSRPPRPWDTPCPPVYAEATHFLYSSGDKEQLRPSFLSSLRPSLTGARRL 360
QY 361 VETIFLGSRPMPGTPRRLLPRLPQRYWOMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPMPGTPRRLLPRLPQRYWOMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
QY 421 PAAGVCAREKPOGSAAPPEEEDTPRRLVQLLRQHSHPQVYGFVRACLRLRVPGLWGS 480
Db 421 PAAGVCAREKPOGSAAPPEEEDTPRRLVQLLRQHSHPQVYGFVRACLRLRVPGLWGS 480
QY 481 RHNERFLRNTKFIISLGKHAKLSLOELTWKMSVRDCAMLRSPGVCVPAAEHRLREBI 540
Db 481 RHNERFLRNTKFIISLGKHAKLSLOELTWKMSVRDCAMLRSPGVCVPAAEHRLREBI 540
QY 541 LAKFLHLMVSVVVELLSRFFVYVTTTFOKNRUFFYRKSVWSKLQSIGIRQHUKRVOLRE 600
Db 541 LAKFLHLMVSVVVELLSRFFVYVTTTFOKNRUFFYRKSVWSKLQSIGIRQHUKRVOLRE 600
QY 601 LSEAEVQRHREARPAALLTSRLRFIPKPDGLRPIVNNMDYVVGARTFRREKAEALTSRVKA 660
Db 601 LSEAEVQRHREARPAALLTSRLRFIPKPDGLRPIVNNMDYVVGARTFRREKAEALTSRVKA 660
QY 661 LFSVLNVERARRPGLLGASVGLGDDIHRAWRTFVLRAQDPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVGLGDDIHRAWRTFVLRAQDPPPELYFVKVDVTGAYDTI 720
QY 721 PODRLTEVTASIIKPONTYCVRRYAVVQKAAGHVKAFAKSHVSTLTDLOPYMROFVAHL 780
Db 721 PODRLTEVTASIIKPONTYCVRRYAVVQKAAGHVKAFAKSHVSTLTDLOPYMROFVAHL 780
QY 781 QETSPURDAVITEQSSSINEASSGLPDMFVLRMCHAVIRKSGSVYQCOGIPGSIISLTL 840
Db 781 QETSPURDAVITEQSSSINEASSGLPDMFVLRMCHAVIRKSGSVYQCOGIPGSIISLTL 840
QY 841 LCSLCYGDMEKFLFAGIRRDGGLLLRLVDDFLVTPHLTHAKTFLRTLVRGPYGCVWNL 900
Db 841 LCSLCYGDMEKFLFAGIRRDGGLLLRLVDDFLVTPHLTHAKTFLRTLVRGPYGCVWNL 900
QY 901 RKTVMNPFVEDEALGCTAFVQMPAHLFPWCGLLDTRTLLEVOSDYSSVARTSIRASLTF 960
Db 901 RKTVMNPFVEDEALGCTAFVQMPAHLFPWCGLLDTRTLLEVOSDYSSVARTSIRASLTF 960
QY 961 NRGFKAGRNNRKLFGVLRLLKCHSLFLDLQVNSLQVCTNIYKILLQAYRFHACVQLQP 1020
Db 961 NRGFKAGRNNRKLFGVLRLLKCHSLFLDLQVNSLQVCTNIYKILLQAYRFHACVQLQP 1020
QY 1021 FHQVWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKGAAAGPLPSEAVQWVCHQAFLL 1080

Db 1021 FHOQWKNPTFFLVRISDTASLCVSIILKAKNAGMSLGAAGFLPSEAVQWLCHQAFLL 1080
Qy 1081 KLTRHRTYVPLGLSLTAQTQSLKPLPGTTLTALEAAANPALPSDFKTILD 1132
Db 1081 KLTRHRTYVPLGLSLTAQTQSLKPLPGTTLTALEAAANPALPSDFKTILD 1132

RESULT 10
AAB82765
ID AAB82765 standard; protein; 1132 AA.
XX AAB82765;
XX 29-OCT-2001 (first entry)
XX Human telomerase reverse transcriptase.
XX
XX Telomerase reverse transcriptase; hTERT; human; cancer; tumour;
KW cytotoxic T lymphocyte; major histocompatibility complex;
KW human leucocyte antigen; HLA-A2.1; vaccine.
XX
XX Homo sapiens.

Key Location/Qualifiers
FH Peptide 13..21
FT /note= "HLA-A2.1 binding motif"
FT Peptide 23..31
FT /note= "HLA-A2.1 binding motif"
FT Peptide 76..84
FT /note= "HLA-A2.1 binding motif"
FT Peptide 96..104
FT /note= "HLA-A2.1 binding motif"
FT Peptide 140..148
FT /note= "HLA-A2.1 binding motif"
FT Peptide 152..160
FT /note= "HLA-A2.1 binding motif"
FT Peptide 346..354
FT /note= "HLA-A2.1 binding motif"
FT Peptide 353..361
FT /note= "HLA-A2.1 binding motif"
FT Peptide 371..379
FT /note= "HLA-A2.1 binding motif"
FT Peptide 388..396
FT /note= "HLA-A2.1 binding motif"
FT Peptide 407..415
FT /note= "HLA-A2.1 binding motif"
FT Peptide 487..495
FT /note= "HLA-A2.1 binding motif"
FT Peptide 540..548
FT /label= p540
FT /note= "HLA-A2.1 binding motif"
FT Peptide 548..556
FT /note= "HLA-A2.1 binding motif"
FT Peptide 555..563
FT /note= "HLA-A2.1 binding motif"
FT Peptide 572..580
FT /note= "HLA-A2.1 binding motif"
FT Peptide 705..713
FT /note= "HLA-A2.1 binding motif"
FT Peptide 724..732
FT /note= "HLA-A2.1 binding motif"
FT Peptide 772..780
FT /note= "HLA-A2.1 binding motif"
FT Peptide 797..805
FT /note= "HLA-A2.1 binding motif"
FT Peptide 812..820
FT /note= "HLA-A2.1 binding motif"
FT Peptide 836..844
FT /note= "HLA-A2.1 binding motif"
FT Peptide 863..871
FT /note= "HLA-A2.1 binding motif"
FT Peptide 865..873
FT /label= p865

FT Peptide /note= "HLA-A2.1 binding motif"
FT 883..891
FT Peptide /note= "HLA-A2.1 binding motif"
FT 926..934
FT Peptide /note= "HLA-A2.1 binding motif"
FT 934..942
FT Peptide /note= "HLA-A2.1 binding motif"
FT 969..977
FT Peptide /note= "HLA-A2.1 binding motif"
FT 988..996
FT Peptide /note= "HLA-A2.1 binding motif"
FT 1072..1080
FT Peptide /note= "HLA-A2.1 binding motif"
FT 1079..1087
FT Peptide /note= "HLA-A2.1 binding motif"
FT 1095..1103
FT Peptide /note= "HLA-A2.1 binding motif"
FT 1122..1130
FT Peptide /note= "HLA-A2.1 binding motif"
XX
XX WO200160391-A1.
XX 23-AUG-2001.
XX 15-FEB-2001; 2001WO-US005143.
XX 15-FEB-2000; 2000US-0182685P.
XX 15-FEB-2001; 2001US-00182685.
XX (REGC) UNIV CALIFORNIA.
XX Zanetti M;
XX WPI; 2001-536552/59.
XX Vaccine for initiating and enhancing a cytotoxic T lymphocyte response,
XX for treating cancers or tumors or for inducing immune response against
XX tumors, comprises a telomerase reverse transcriptase peptide.
XX Disclosure; Fig 5; 52pp; English.
XX The present sequence is that of human telomerase reverse transcriptase
XX (hTERT). The sequence was analysed for 9-mer peptide sequences containing
XX known binding motifs for the human leukocyte antigen HLA-A2.1 molecule.
XX From an initial panel of about 30 candidate peptides, 2 sequences,
XX denoted p540 (see AAB82772) and p865 (see AAB82773), were examined. The
XX majority of healthy individuals as well as patients with prostate cancer
XX immunised in vitro against these 2 HLA-A2.1 restricted peptides developed
XX hTERT-specific cytotoxic T lymphocytes (CTL). The cancer patients' CTL
XX specifically lysed a variety of HLA-A2+ cancer cell lines such as
XX prostate, breast, colon, lung and melanoma, demonstrating immunological
XX recognition of endogenously-processed hTERT peptides. In vivo immunisation
XX of HLA-A2.1 transgenic mice generated a specific CTL response against
XX both hTERT peptides. The induction of CTL responses in vitro and in vivo,
XX and the susceptibility to lysis of tumour cells of various origins by
XX hTERT CTL suggest that hTERT could serve as a universal cancer vaccine for
XX humans. Thus a claimed universal vaccine for treating tumours of any
XX origin comprises at least 1 hTERT peptide in an amount effective for
XX initiating and enhancing a CTL response against cancer cells. The peptide
XX is 7-15 amino acid residues in length and may be modified to enhance
XX binding to the major histocompatibility complex. Also claimed is a method
XX for inducing and enhancing a CTL response against cancer cells, involving
XX harvesting blood leucocytes, pulsing with hTERT, and contacting cancer
XX cells with the pulsed leucocytes. A method for targeting CTL to tumour
XX cells is also claimed, and involves administering a hTERT peptide to a
XX mammal, especially a cancer patient
XX Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 4; Length 1132;
Best Local Similarity 100.0%; Pred. NO. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAAFRALVAOCLVCVPW 60
DB 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAAFRALVAOCLVCVPW 60
QY 61 DARPPPAAPSFQVSCCLKELAVRVLQRLCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
DB 61 DARPPPAAPSFQVSCCLKELAVRVLQRLCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
QY 121 SYLPNTVTDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
DB 121 SYLPNTVTDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
QY 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGSASRSLPLPKRPRR 240
DB 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGSASRSLPLPKRPRR 240
QY 241 GAAPERTPTVPGOGSWAHFQTRGSDRGFCVVSPPARPAEATSLGALSGLTGRHSPSVG 300
DB 241 GAAPERTPTVPGOGSWAHFQTRGSDRGFCVVSPPARPAEATSLGALSGLTGRHSPSVG 300
QY 301 ROHAGPPSTSRPRPMDTPCPVYAEKTHFLYSSGDKQOLRPSFLLSSLRPSLTGARRL 360
DB 301 ROHAGPPSTSRPRPMDTPCPVYAEKTHFLYSSGDKQOLRPSFLLSSLRPSLTGARRL 360
QY 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGYLLKTHCPLRAAVT 420
DB 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGYLLKTHCPLRAAVT 420
QY 421 PAAGVCAREKPOGSVAAPBEEDTPRRLVQLLRQHSPPWQYGFVRACLRLVPPGLWGS 480
DB 421 PAAGVCAREKPOGSVAAPBEEDTPRRLVQLLRQHSPPWQYGFVRACLRLVPPGLWGS 480
QY 481 RHNERFLRNTKFIISLGKHAHLSLOBLTWKMSVRDCAWLRSPGVGCVPAEAHRLEEEI 540
DB 481 RHNERFLRNTKFIISLGKHAHLSLOBLTWKMSVRDCAWLRSPGVGCVPAEAHRLEEEI 540
QY 541 LAKFLHLMMSVYVVELLRSFFYTETTFQKNRFFFYRKSWSKLQSIGIRQHILKRVQLE 600
DB 541 LAKFLHLMMSVYVVELLRSFFYTETTFQKNRFFFYRKSWSKLQSIGIRQHILKRVQLE 600
QY 601 LSAEVRQHREARPAALLTSRLRIPKPDGLRPIVNMDDYVVGARTFRREKAEHLTSRVKA 660
DB 601 LSAEVRQHREARPAALLTSRLRIPKPDGLRPIVNMDDYVVGARTFRREKAEHLTSRVKA 660
QY 661 LFSVLNAYERARRPGLLGASVLGDDIHRWKRTFVLVRADDPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNAYERARRPGLLGASVLGDDIHRWKRTFVLVRADDPPELYFVKVDVTGAYDTI 720
QY 721 PODRLTEVIAIIKPNQTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
DB 721 PODRLTEVIAIIKPNQTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
QY 781 QETSPLRDVAVIQSSSLNEASSGLFDVFLRFMCHHVRIRGKSYVQCQIGIPGGSILSTL 840
DB 781 QETSPLRDVAVIQSSSLNEASSGLFDVFLRFMCHHVRIRGKSYVQCQIGIPGGSILSTL 840
QY 841 LCSLCYGDMEKLPAGIRRDGLLRLVDDFLLVTPHLLTHAKTLRTLVRGVBYGCVVNL 900
DB 841 LCSLCYGDMEKLPAGIRRDGLLRLVDDFLLVTPHLLTHAKTLRTLVRGVBYGCVVNL 900
QY 901 RKTVMNPFVDEALGGTAFVQMPAHGLFPWCGLLDTRTILEVQSDYSSYARTSIRASLTF 960
DB 901 RKTVMNPFVDEALGGTAFVQMPAHGLFPWCGLLDTRTILEVQSDYSSYARTSIRASLTF 960
QY 961 NRQFKAGNRMRRLFGVLRLLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
DB 961 NRQFKAGNRMRRLFGVLRLLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
QY 1021 FHOQWKNPFFLRVSDTASLCYSILKAKNAGMSLGAKAAGPLPSEAVQWILCHQAFLL 1080
DB 1021 FHOQWKNPFFLRVSDTASLCYSILKAKNAGMSLGAKAAGPLPSEAVQWILCHQAFLL 1080
QY 1081 KLTRHRTVYVPLLGSLRTAQTLQSRKLPGTTLTALEAAANPALPSDFKTLTD 1132

DB 1081 KLTRHRTVYVPLLGSLRTAQTLQSRKLPGTTLTALEAAANPALPSDFKTLTD 1132
RESULT 11
AAE29226
ID AAE29226 standard; protein; 1132 AA.
XX
AC AAE29226;
DT 27-JAN-2003 (first entry)
XX
DE Human telomerase reverse transcriptase (TERT).
XX
KW Carbohydrate antigen; alpha(1,3)galactosyltransferase; alpha1.3GT; TERT;
KW transgenic; alpha(1,2)fucosyltransferase; alpha1.2Ft; human; enzyme;
KW telomerase reverse transcriptase.
XX
OS Homo sapiens.
XX
PN WO200274948-A2.
PD 26-SEP-2002.
XX
PF 21-MAR-2002; 2002WO-CA000378.
XX
PR 21-MAR-2001; 2001US-0277811P.
XX
PA (GERO-) GERON CORP.
XX
PI Denning C, Clark AJ, Schiff JM;
XX
DR WPI: 2002-759895/82.
DR N-PSDB; AAD46821.
XX
PT Mammalian cells, useful for producing animal tissues with carbohydrate
antigens that are compatible for transplantation into human patients.
XX
PS Disclosure; Page 34; 71pp; English.
XX
CC The invention relates to animal tissues with carbohydrate antigens that
are compatible for transplantation into human patients. The mammalian
cell is inactivated homoyously for expression of alpha(1,3)galactosyl-
transferase (alpha1,3GT) gene and comprises a transgene for alpha(1,2)-
fucosyltransferase (alpha1,2Ft). It is useful for producing animal tissue
with carbohydrate antigens that are compatible for transplantation into
human patients. The present sequence is human telomerase reverse
transcriptase (TERT) used in the invention
XX
SQ Sequence 1132 AA;
Query Match 100.0%; Score 5961; DB 5; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAAFRALVAOCLVCVPW 60
DB 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAAFRALVAOCLVCVPW 60
QY 61 DARPPPAAPSFQVSCCLKELAVRVLQRLCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
DB 61 DARPPPAAPSFQVSCCLKELAVRVLQRLCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
QY 121 SYLPNTVTDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
DB 121 SYLPNTVTDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
QY 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGSASRSLPLPKRPRR 240
DB 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGSASRSLPLPKRPRR 240
QY 241 GAAPERTPTVPGOGSWAHFQTRGSDRGFCVVSPPARPAEATSLGALSGLTGRHSPSVG 300
DB 241 GAAPERTPTVPGOGSWAHFQTRGSDRGFCVVSPPARPAEATSLGALSGLTGRHSPSVG 300

Db 241 GAAPERTPVQGSWAHPGTRGSDRGFCVWSPARPABEATSLEGALGSTRHSHPSVG 300
Qy 301 RQHAGPSTSRPRPMDTCCPPVYAEKTHFLYSSGDKQELRPSFLSSLRPSLTGARRL 360
Db 301 RQHAGPSTSRPRPMDTCCPPVYAEKTHFLYSSGDKQELRPSFLSSLRPSLTGARRL 360
Qy 361 VETIFLGSRRPMPGTPRRLPRLPQRYQWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRRPMPGTPRRLPRLPQRYQWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Qy 421 PAAGVCAREKPOGSVAAPBEEDTDRRLVOLLQHSHPQVYGFVRACLRRLLVPPGLWGS 480
Db 421 PAAGVCAREKPOGSVAAPBEEDTDRRLVOLLQHSHPQVYGFVRACLRRLLVPPGLWGS 480
Qy 481 RHNERRFLRNTKFKISLGKIAKLSLOELTWKMSVRDCAWLRSPGVGCVPAAEHRREI 540
Db 481 RHNERRFLRNTKFKISLGKIAKLSLOELTWKMSVRDCAWLRSPGVGCVPAAEHRREI 540
Qy 541 LAKPLHLMMSVYVVELLRSFFYVTTTFFQKNRLFYFKSVWSKLQSIGIRQHLKRVQLRE 600
Db 541 LAKPLHLMMSVYVVELLRSFFYVTTTFFQKNRLFYFKSVWSKLQSIGIRQHLKRVQLRE 600
Qy 601 LSEAEVQREARPAALLTSRLRTPKPDGLRPIVNDYVVGARTFRREKRAERLTSRVKA 660
Db 601 LSEAEVQREARPAALLTSRLRTPKPDGLRPIVNDYVVGARTFRREKRAERLTSRVKA 660
Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRAQDPPELVFKVDVVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRAQDPPELVFKVDVVTGAYDTI 720
Qy 721 PQRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
Db 721 PQRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
Qy 781 QETSPURDADVIRQSSSLNEASSGLFDVFLRFCHHVAIRGKSYVQCGIIPQGSILSTL 840
Db 781 QETSPURDADVIRQSSSLNEASSGLFDVFLRFCHHVAIRGKSYVQCGIIPQGSILSTL 840
Qy 841 LCSLCYGDMEKLFAGIRRDGLLRLVDLFLVTPHLTHAKTFLRLVRGVEYGCNVNL 900
Db 841 LCSLCYGDMEKLFAGIRRDGLLRLVDLFLVTPHLTHAKTFLRLVRGVEYGCNVNL 900
Qy 901 RKTVMFPVEDEALGTAFAVQMPAHGLFPWCGLLTDTRTLEQSDYSSVARTSIRASLTF 960
Db 901 RKTVMFPVEDEALGTAFAVQMPAHGLFPWCGLLTDTRTLEQSDYSSVARTSIRASLTF 960
Qy 961 NRGFKAGRNRRKLFGLRLKCHSLFDLQVNSLQVCTNIYKILLQAYRHACVLQLP 1020
Db 961 NRGFKAGRNRRKLFGLRLKCHSLFDLQVNSLQVCTNIYKILLQAYRHACVLQLP 1020
Qy 1021 FHOQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVOMLCHQAFLL 1080
Db 1021 FHOQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVOMLCHQAFLL 1080
Qy 1081 KLTRHRTVYVPLIGSLRTAQTLRSKLPCTTLTALEAANPALPSPDKTILD 1132
Db 1081 KLTRHRTVYVPLIGSLRTAQTLRSKLPCTTLTALEAANPALPSPDKTILD 1132

RESULT 12

AAU72735
ID AAU72735 standard; protein; 1132 AA.
XX
AC AAU72735;
XX
DT 09-APR-2002 (first entry)
XX
DE Human telomerase reverse transcriptase (TERT).
XX
KW Telomerase reverse transcriptase; TERT; cytostatic; apoptosis;
KW cell growth inhibitor; antisense oligonucleotide; antisense technology.
XX
OS Homo sapiens.

XX
PN
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PD
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PF
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PR
PR
PA
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PI
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DR
DR
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PT
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PT
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PS
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CC
CC
CC
CC
CC
CC
CC
CC
CC
CC
CC
SQ

Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 5; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MPRAPCRCAVRSLLRSHYREVLPVPLATFVRRLGPOGWRVLVQRGDPAAFRALVAQCCLVCVPW 60
Db 1 MPRAPCRCAVRSLLRSHYREVLPVPLATFVRRLGPOGWRVLVQRGDPAAFRALVAQCCLVCVPW 60
Qy 61 DARPPPAAPSPRQVSCUKELVARVLQRCERGAKNVLAFGPALLDARGGPEAFTTSVR 120
Db 61 DARPPPAAPSPRQVSCUKELVARVLQRCERGAKNVLAFGPALLDARGGPEAFTTSVR 120
Qy 121 SYLNTVNTDALRGSGAWGLLRLRVGDDVLVHLARCALFVLVAPSCAYOVCGPPLYQLGA 180
Db 121 SYLNTVNTDALRGSGAWGLLRLRVGDDVLVHLARCALFVLVAPSCAYOVCGPPLYQLGA 180
Qy 181 ATQARPPPHASGPRRRRLGCERAMNHSVREAGVPLGLPAPGARRRGGSASRSLPKRPRR 240
Db 181 ATQARPPPHASGPRRRRLGCERAMNHSVREAGVPLGLPAPGARRRGGSASRSLPKRPRR 240
Qy 241 GAAPEPRTPVQGSWAHPGTRGSDRGFCVWSPARPABEATSLEGALGSTRHSHPSVG 300
Db 241 GAAPEPRTPVQGSWAHPGTRGSDRGFCVWSPARPABEATSLEGALGSTRHSHPSVG 300
Qy 301 RQHAGPSTSRPRPMDTCCPPVYAEKTHFLYSSGDKQELRPSFLSSLRPSLTGARRL 360
Db 301 RQHAGPSTSRPRPMDTCCPPVYAEKTHFLYSSGDKQELRPSFLSSLRPSLTGARRL 360
Qy 361 VETIFLGSRRPMPGTPRRLPRLPQRYQWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420

WO200188198-A1.
22-NOV-2001.
15-MAY-2001; 2001WO-US015774.
16-MAY-2000; 2000US-00572423.
07-DEC-2000; 2000US-00733294.
(ISIS-) ISIS PHARM INC.
Monia BP, Gaarde WA, Freier SM, Wancewicz E;
WPI; 2002-075321/10.
N-PSDB; AAS96607.
New compound targeted to nucleic acid molecule encoding telomerase transcriptase (TERT), which specifically hybridizes with and inhibits expression of TERT, useful for modulating apoptosis and inhibiting cell growth.

Disclosure; Page 100-105; 154pp; English.

The invention describes a compound, 8-50 nucleobases in length targeted to a nucleic acid molecule encoding human TERT (telomerase reverse transcriptase), where the compound specifically hybridizes with and inhibits the expression of TERT. A series of oligonucleotides were designed to target different regions of the human TERT RNA. These were 20 nucleotides in length and composed of a central gap region consisting of ten 2'-deoxynucleotides, flanked on both sides (5' and 3' directions) by five nucleotide wings. The wings were composed of 2'-methoxyethyl (2'-MOE) nucleotides. The compounds were analysed for their effect on human TERT mRNA levels by reverse transcriptase (RT)-polymerase chain reaction (PCR). The compound is useful for inhibiting the expression of TERT in cells or tissues, for treating a human having disease or condition associated with TERT, for modulating apoptosis, for inhibiting cell growth (preferably, cancer cell growth), in antisense therapy and for diagnostic and therapeutic purposes. This is the amino acid sequence of human telomerase reverse transcriptase (TERT), described in the method of the invention

Db 361 VETIFLGSRPWMPGTPTRRRLPRLPQRYQWMPRLPLLELGNHAQCPYGVLLKTKHCPRAAAT 420
Qy 421 PAAGVCAREKPOGSVAAPPEEDTDPRRLVQLLRQHSPPWQYGFVRACLRLRLLVPPGLWGS 480
Db 421 PAAGVCAREKPOGSVAAPPEEDTDPRRLVQLLRQHSPPWQYGFVRACLRLRLLVPPGLWGS 480
Qy 481 RHNERRPLRNTKFI SLGKHAKLSLQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Db 481 RHNERRPLRNTKFI SLGKHAKLSLQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Qy 541 LAKFLHLMWSVYVVELLSRPFYTTTFQKNRLFYRKSVWSKLQSIGIRHQLRVQLRE 600
Db 541 LAKFLHLMWSVYVVELLSRPFYTTTFQKNRLFYRKSVWSKLQSIGIRHQLRVQLRE 600
Qy 601 LSAEVRQHREARPAALLTSRLRIPKPDGLRPIVNMDDYVVGARTFRREKRAELTISRKA 660
Db 601 LSAEVRQHREARPAALLTSRLRIPKPDGLRPIVNMDDYVVGARTFRREKRAELTISRKA 660
Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRQAQDPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRQAQDPPPELYFVKVDVTGAYDTI 720
Qy 721 PODRLTEVIASIIKPONTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPQYMRQFVAHL 780
Db 721 PODRLTEVIASIIKPONTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPQYMRQFVAHL 780
Qy 781 QETSPLRDADVIEQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYQCGIPGSGISLSTL 840
Db 781 QETSPLRDADVIEQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYQCGIPGSGISLSTL 840
Qy 841 LCSLCYGDMEKLFAGIRRDGLLRLVDDPFLVTPHLTHAKTFLRLTVRGVPYGCVNIL 900
Db 841 LCSLCYGDMEKLFAGIRRDGLLRLVDDPFLVTPHLTHAKTFLRLTVRGVPYGCVNIL 900
Qy 901 RKTVMNPFVEDEALGTAFFVQMPAHGLFPWCGLLLDTRTLEVOQSDYSSVARTSIRASLTF 960
Db 901 RKTVMNPFVEDEALGTAFFVQMPAHGLFPWCGLLLDTRTLEVOQSDYSSVARTSIRASLTF 960
Qy 961 NRGFKAGNRMRKLFGLVRLKCHSLFDLQVNSLQTVCTNIYKILLQAYRFHACVLOLP 1020
Db 961 NRGFKAGNRMRKLFGLVRLKCHSLFDLQVNSLQTVCTNIYKILLQAYRFHACVLOLP 1020
Qy 1021 FHQOVWKNPTFFLRVSDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWILCHOAFLL 1080
Db 1021 FHQOVWKNPTFFLRVSDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWILCHOAFLL 1080
Qy 1081 KLTRHRVTVYVPLGLSLRTAQTLQSRKLPGLTTLTALEAAANPALPSPDKTILD 1132
Db 1081 KLTRHRVTVYVPLGLSLRTAQTLQSRKLPGLTTLTALEAAANPALPSPDKTILD 1132

RESULT 13

ABR42384
ID ABR42384 standard; protein; 1132 AA.
XX
AC ABR42384;
XX
XT 11-AUG-2003 (first entry)
XX
DE Human telomerase reverse transcriptase.
XX
KW Telomerase reverse transcriptase; TERT; enzyme; RNA interference;
KW short interfering RNA; siRNA; cancer; tumour; cytostatic; contraceptive;
KW immunosuppressive; antiinfertility; fungicide; antiparasitic;
KW antiinflammatory; human; gene therapy.
XX
OS Homo sapiens.
XX
PN WO2003035667-A2.
XX
PD 01-MAY-2003.
XX

PF 16-OCT-2002; 2002WO-US033065.
XX
PR 22-OCT-2001; 2001US-0345326P.
PR 20-FEB-2002; 2002US-0359196P.
PR 22-MAY-2002; 2002US-0383195P.
XX
PA (UYRP) UNIV ROCHESTER.
XX
PI Rowley PT;
XX
DR WPI; 2003-403336/38.
DR N-PSDB; ACC58039.
XX
PT Novel double-stranded short interfering RNA having sense and antisense
PT nucleic acids which are complementary to each other and to target nucleic
PT acid e.g., telomerase RNA or mRNA encoding telomerase reverse
PT transcriptase.
XX
PS Disclosure; Fig 4; 37pp; English.
XX
CC The present sequence is the protein sequence of human telomerase reverse
CC transcriptase (TERT). The invention relates to the discovery that double-
CC stranded interfering RNAs, such as short interfering RNAs (siRNA), which
CC target telomerase RNA or TERT mRNA are capable of inhibiting telomerase
CC activity. Inhibition of telomerase in cancer cells leads to telomere
CC shortening, end-to-end chromosomal fusion, and apoptosis. Interference of
CC telomerase activity can also be used for treatment of infertility, for
CC contraception or sterilisation, for immunosuppression, for treatment of
CC yeast, parasite and fungal infections, and in antiinflammatory therapies.
CC As telomerase is active in a limited number of cell types, e.g. tumour
CC cells, germline cells, certain stem cells of the haematopoietic system, T
CC and B cells, sun-damaged skin, and proliferative cervix, most normal
CC cells are not affected by telomerase RNA interference therapy
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 6; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MPRAPRCRAVRSLRSHYREVLPATFVRRRLGPOGRLVQRGDPAAFRALVAOCLVCVPW 60
Db 1 MPRAPRCRAVRSLRSHYREVLPATFVRRRLGPOGRLVQRGDPAAFRALVAOCLVCVPW 60
Qy 61 DARPPAAPSFQVSCCLKELVARVLQRLCERGAKNVLAFGFALLDGAAGPPPEAFTTSVR 120
Db 61 DARPPAAPSFQVSCCLKELVARVLQRLCERGAKNVLAFGFALLDGAAGPPPEAFTTSVR 120
Qy 121 SYLPTNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 121 SYLPTNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Qy 181 ATQARPPPHASGPRRLRGGERAWNHSVREAGVPLGLPAGARRRGGSASRSLPLPKPRR 240
Db 181 ATQARPPPHASGPRRLRGGERAWNHSVREAGVPLGLPAGARRRGGSASRSLPLPKPRR 240
Qy 241 GAAPEPERTVPGQSWAHFGRTGRPSDRGFCVVSPARPAEEATSLRGALSGTRHSHPSVG 300
Db 241 GAAPEPERTVPGQSWAHFGRTGRPSDRGFCVVSPARPAEEATSLRGALSGTRHSHPSVG 300
Qy 301 RQHAGPPPTSRPPRPWDTPCPVVAETKHFLYSSGDKQLRPSFLLSLRLPSLTGARRL 360
Db 301 RQHAGPPPTSRPPRPWDTPCPVVAETKHFLYSSGDKQLRPSFLLSLRLPSLTGARRL 360
Qy 361 VETIFLGSRPWMPGTPTRRRLPRLPQRYQWMPRLPLLELGNHAQCPYGVLLKTKHCPRAAAT 420
Db 361 VETIFLGSRPWMPGTPTRRRLPRLPQRYQWMPRLPLLELGNHAQCPYGVLLKTKHCPRAAAT 420
Qy 421 PAAGVCAREKPOGSVAAPPEEDTDPRRLVQLLRQHSPPWQYGFVRACLRLRLLVPPGLWGS 480
Db 421 PAAGVCAREKPOGSVAAPPEEDTDPRRLVQLLRQHSPPWQYGFVRACLRLRLLVPPGLWGS 480
Qy 481 RHNERRPLRNTKFI SLGKHAKLSLQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540

Db 481 RHNERFLRNTKFTSLGKHAQLSLQELTWKMSVRDCAWLRRSPGVGCPAAEHLREEI 540
Qy 541 LAKFLHLMMSVYVVELLRSFFVTTTFQKNRLFYRKSVWSKLQSIGIRQHLKRVLRE 600
Db 541 LAKFLHLMMSVYVVELLRSFFVTTTFQKNRLFYRKSVWSKLQSIGIRQHLKRVLRE 600
Qy 601 LSEAEVRQHREARPALTSRLRFPKPDGLRPIVNMDDYVVGARTFRREKRAERLTSRKA 660
Db 601 LSEAEVRQHREARPALTSRLRFPKPDGLRPIVNMDDYVVGARTFRREKRAERLTSRKA 660
Qy 661 LFSVLNVERARRPGLGASVLGLDDIHRARWTFVLRVRAQDPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLGASVLGLDDIHRARWTFVLRVRAQDPPPELYFVKVDVTGAYDTI 720
Qy 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
Db 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
Qy 781 QETSPLRDVAVIEQSSLINEASSGLFDVFLRFMCHHAVIRGKSVYQCQIPOGSIILSTL 840
Db 781 QETSPLRDVAVIEQSSLINEASSGLFDVFLRFMCHHAVIRGKSVYQCQIPOGSIILSTL 840
Qy 841 LCSICYGDMENKLPAGIRRGDGLLRLVDDFLLVTPHLLTHAKTFLRLTVRGVPEYGCVNL 900
Db 841 LCSICYGDMENKLPAGIRRGDGLLRLVDDFLLVTPHLLTHAKTFLRLTVRGVPEYGCVNL 900
Qy 901 RKTVNFVPEDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVOSSDYSSVARTSIRASLTF 960
Db 901 RKTVNFVPEDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVOSSDYSSVARTSIRASLTF 960
Qy 961 NRGFKAGNNRRKLFVGLRLKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
Db 961 NRGFKAGNNRRKLFVGLRLKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
Qy 1021 FHOQVKNPTFFLRVISDTSILCYSTILKAKNAGMSLGAKGAGPLPSEAVQMLCHOAFLL 1080
Db 1021 FHOQVKNPTFFLRVISDTSILCYSTILKAKNAGMSLGAKGAGPLPSEAVQMLCHOAFLL 1080
Qy 1081 KLTRHRVTVYVPLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132
Db 1081 KLTRHRVTVYVPLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132
RESULT 14
ABR42063
ID ABR42063 standard; protein; 1132 AA.
XX ABR42063;
XX AC
XX DT 28-JUL-2003 (first entry)
XX DE Human telomerase reverse transcriptase.
XX KW Telomerase reverse transcriptase; TERT; enzyme; RNA interference;
KW short interfering RNA; siRNA; cancer; tumour; cytostatic; contraceptive;
KW immunosuppressive; antifertility; fungicide; antiparasitic;
XX antiinflammatory; human; gene therapy.
OS Homo sapiens.
XX WO2003034985-A2.
XX PD 01-MAY-2003.
XX PF 16-OCT-2002; 2002WO-US033146.
XX PR 22-OCT-2001; 2001US-0345326P.
XX PR 20-FEB-2002; 2002US-0359196P.
XX PR 22-MAY-2002; 2002US-0383195P.
XX (UYRP) UNIV ROCHESTER.
XX PA
XX

PI Rowley PT;
XX MPI; 2003-403289/38.
DR N-PSDB; ACC57552.
XX Novel nucleic acid encoding or comprising interfering RNAs which target
PT telomerase RNA, useful for inhibiting telomerase activity for treating
PT cancer, infertility and disorders of the immune system.
XX Disclosure; Fig 4; 52pp; English.
XX The present sequence is that of human telomerase reverse transcriptase
CC (TERT). The invention relates to the discovery that double-stranded
CC interfering RNAs, such as short interfering RNAs (siRNA), which target
CC telomerase RNA or TERT mRNA are capable of inhibiting telomerase
CC activity. Inhibition of telomerase in cancer cells leads to telomere
CC shortening, end-to-end chromosomal fusion, and apoptosis. Interference of
CC telomerase activity can also be used for treatment of infertility, for
CC contraception or sterilisation, for immunosuppression, for treatment of
CC yeast, parasite and fungal infections, and in antiinflammatory therapies.
CC As telomerase is active in a limited number of cell types, e.g. tumour
CC cells, germline cells, certain stem cells of the haematopoietic system, T
CC and B cells, sun-damaged skin, and proliferative cervix, most normal
CC cells are not affected by telomerase RNA interference therapy
XX
SQ Sequence 1132 AA;
Query Match 100.0%; Score 5961; DB 6; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MPRAPRCRAVSLRSHYREVLPPLATFVRRLGPOGWRLVQRGDPAAFPALVAQCLVCPW 60
Db 1 MPRAPRCRAVSLRSHYREVLPPLATFVRRLGPOGWRLVQRGDPAAFPALVAQCLVCPW 60
Qy 61 DARPPPAAPSPRQVSKELVARVLQRLCERGAKNVLAFFGALLDGGAGGPEAFTTSVR 120
Db 61 DARPPPAAPSPRQVSKELVARVLQRLCERGAKNVLAFFGALLDGGAGGPEAFTTSVR 120
Qy 121 SYLNTVTDALRGSGAWGLLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 121 SYLNTVTDALRGSGAWGLLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Qy 181 ATOARPPPHASGPRRRRLGCEAWNHSVREAGVPLGLPAGARRRGGSASRLPLPKPRR 240
Db 181 ATOARPPPHASGPRRRRLGCEAWNHSVREAGVPLGLPAGARRRGGSASRLPLPKPRR 240
Qy 241 GAAPERTPVQGSWAHPGRTGRGFCVVSFARPAEATSEALSGSTRHSHPSVG 300
Db 241 GAAPERTPVQGSWAHPGRTGRGFCVVSFARPAEATSEALSGSTRHSHPSVG 300
Qy 301 ROHHAGPSTSRPPRPMWDTCPVYAEYKHLFYSYSGDKEQLRPSFLSSRLPSLTGARRL 360
Db 301 ROHHAGPSTSRPPRPMWDTCPVYAEYKHLFYSYSGDKEQLRPSFLSSRLPSLTGARRL 360
Qy 361 VETIFLGSRRPMPGTPRRLPRLPORYQWMPPLFLELGNHACQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRRPMPGTPRRLPRLPORYQWMPPLFLELGNHACQCPYGVLLKTHCPLRAAVT 420
Qy 421 PAAGVCAREKPGQSVAAPEEEDTPRELVLQRLHSHSPWQVYGFVRACLRLRPPGLWGS 480
Db 421 PAAGVCAREKPGQSVAAPEEEDTPRELVLQRLHSHSPWQVYGFVRACLRLRPPGLWGS 480
Qy 481 RHNERFLRNTKFTSLGKHAQLSLQELTWKMSVRDCAWLRRSPGVGCPAAEHLREEI 540
Db 481 RHNERFLRNTKFTSLGKHAQLSLQELTWKMSVRDCAWLRRSPGVGCPAAEHLREEI 540
Qy 541 LAKFLHLMMSVYVVELLRSFFVTTTFQKNRLFYRKSVWSKLQSIGIRQHLKRVLRE 600
Db 541 LAKFLHLMMSVYVVELLRSFFVTTTFQKNRLFYRKSVWSKLQSIGIRQHLKRVLRE 600
Qy 601 LSEAEVRQHREARPALTSRLRFPKPDGLRPIVNMDDYVVGARTFRREKRAERLTSRKA 660
Db 601 LSEAEVRQHREARPALTSRLRFPKPDGLRPIVNMDDYVVGARTFRREKRAERLTSRKA 660

Db 601 LSEAEVQRHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA 660
QY 661 LFSVLNAYERARRPGLLGASVLGLDDIHRAWRRTFVLVRADPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNAYERARRPGLLGASVLGLDDIHRAWRRTFVLVRADPPPELYFVKVDVTGAYDTI 720
QY 721 PQDLRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLQPYNRQFVAHL 780
Db 721 PQDLRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLQPYNRQFVAHL 780
QY 781 QETSPURDVAVVIQSSSLNEASSGLPDVFLREWFCHHRAVRIRGKSYVQCQGIPOGSIILSTL 840
Db 781 QETSPURDVAVVIQSSSLNEASSGLPDVFLREWFCHHRAVRIRGKSYVQCQGIPOGSIILSTL 840
QY 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRLTVRGVPEYGCVVNL 900
Db 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRLTVRGVPEYGCVVNL 900
QY 901 RKTVMNPPVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVQSDYSSYARTSIRASLTF 960
Db 901 RKTVMNPPVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVQSDYSSYARTSIRASLTF 960
QY 961 NRGFKAGRMNRRLFGVLRLLKCHSLFLDLQVNSLQTVCTNIYKILLLOAVRFHACVLOLP 1020
Db 961 NRGFKAGRMNRRLFGVLRLLKCHSLFLDLQVNSLQTVCTNIYKILLLOAVRFHACVLOLP 1020
QY 1021 FHOQVWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKAAGPLPSEAVQWLCHQAFLL 1080
Db 1021 FHOQVWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKAAGPLPSEAVQWLCHQAFLL 1080
QY 1081 KLTRHRVTVYVPLGLSLRTAQTLQSRKLPGLTTLTALBAANPALPSPDFKTILD 1132
Db 1081 KLTRHRVTVYVPLGLSLRTAQTLQSRKLPGLTTLTALBAANPALPSPDFKTILD 1132

RESULT 15

ABP56676
ID ABP56676 standard; protein; 1132 AA.
XX ABP56676;
XX
XX
DT 25-MAR-2003 (first entry)
XX
DE Human telomerase reverse transcriptase protein SEQ ID NO:2.
XX Human;
KW Human; telomerase reverse transcriptase; enzyme; hTERT; chromosome 5;
KW vulnary; antiulcer; epithelial cell migration promoter; wound;
KW epithelisation; skin wound; lesion; burn; surgical incision; ulcer;
KW epithelial cell; keratinocyte; epidermal; mucosal.
XX
OS Homo sapiens.
XX
XX
PN WO200291999-A2.
XX
PD 21-NOV-2002.
XX
XX 09-MAY-2002; 2002WO-US014867.
XX
PR 09-MAY-2001; 2001US-0289903P.
XX
XX (GERO-) GERON CORP.
XX
XX Jiang X, Chiu C, Harley CB;
XX WPI; 2003-120591/11.
DR N-PSDB; ABZ22474.
DR
XX Composition for treating wounds and enhancing epithelization of a skin
PT surface, comprises vector encoding telomerase reverse transcriptase or
PT telomerized epithelial cells on a microparticle or a matrix.
XX
PS Disclosure; Page 32; 68pp; English.
XX

CC The present invention describes a pharmaceutical composition (I) comprising a vector encoding telomerase reverse transcriptase (TERT) in an excipient or device, or comprises telomerised epithelial cells on a microparticle or a matrix suitable for topical administration or administration to a wound site. (I) has vulnerary and antiulcer activities and can be used to promote epithelial cell migration. (I) is useful for treating a wound and enhancing epithelisation of a skin surface. The wound is especially skin wound including acute lesion such as traumatic lesion, burn, or surgical incision, chronic lesion such as chronic venous ulcer, diabetic ulcer or compression ulcer and the wound is further monitored for closure. The telomerase activity or TERT expression is increased in epithelial cells at the site of treatment and also in fibroblasts or endothelial cells at the site of treatment. The epithelial cells are especially keratinocytes. A polynucleotide encoding TERT is useful for the preparation of a medicament for treatment of a wound or an epithelial surface in a human or animal. An epithelial cell with increased telomerase activity or increased expression of TERT is useful for preparation of a medicament for the treatment of a wound in a human or animal. (I) is also useful for treating wounds of other epidermal surfaces including mucosal surfaces such as bronchus, mouth, nose, oesophagus, stomach, or intestine. The present sequence represents human TERT (hTERT), which is given in the exemplification of the present invention. hTERT is located to chromosome 5
XX
SQ Sequence 1132 AA;
Query Match 100.0%; Score 5961; DB 6; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSLRLSHYREVLPATFVRRRLGPGQWRLVQRGDPAPAFRALVAOCLVCVPW 60
Db 1 MPRAPRCRAVRSLRLSHYREVLPATFVRRRLGPGQWRLVQRGDPAPAFRALVAOCLVCVPW 60
QY 61 DARPPAAPSPRQVCLKEIVARVLOLRCERGAKNVLAEGFALLDARGCGPPFAFTSVR 120
Db 61 DARPPAAPSPRQVCLKEIVARVLOLRCERGAKNVLAEGFALLDARGCGPPFAFTSVR 120
QY 121 SYLNTVTDALRGSGAWGLLLRRVDDVLVHLARCALFVLVAPSCAYQVCGPPLVOLGA 180
Db 121 SYLNTVTDALRGSGAWGLLLRRVDDVLVHLARCALFVLVAPSCAYQVCGPPLVOLGA 180
QY 181 ATOARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAPGARRRGSGASRSLPLKPRR 240
Db 181 ATOARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAPGARRRGSGASRSLPLKPRR 240
QY 241 GAAPEPERTVCGQSWAHGRTGSDRGFCVVSPPARPAEATSLGALSCTHSHPSVG 300
Db 241 GAAPEPERTVCGQSWAHGRTGSDRGFCVVSPPARPAEATSLGALSCTHSHPSVG 300
QY 301 ROHHAGPPSTSPRPDPWDTPCPPVYAEETHFLYSSGDKQOLRPSFLLSLRSLTGAARL 360
Db 301 ROHHAGPPSTSPRPDPWDTPCPPVYAEETHFLYSSGDKQOLRPSFLLSLRSLTGAARL 360
QY 361 VETIFLGSRPMPGTPRRRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPMPGTPRRRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
QY 421 PAAGVCAREKPGQSVAAPEEEDTDPRLLVOLLROHSSPWQVYGFVACLRLLVPPGLWGS 480
Db 421 PAAGVCAREKPGQSVAAPEEEDTDPRLLVOLLROHSSPWQVYGFVACLRLLVPPGLWGS 480
QY 481 RHNERFLRNTKFFISLGKHAKLSLOELTWKMSVRDCAWLRSPGVCVPAAEHRLREEI 540
Db 481 RHNERFLRNTKFFISLGKHAKLSLOELTWKMSVRDCAWLRSPGVCVPAAEHRLREEI 540
QY 541 LAKFLHMLSVVVELLSRFFVYTETTFQKNRLFYFKSVWSKLQSIGIRQHUKRVOLRE 600
Db 541 LAKFLHMLSVVVELLSRFFVYTETTFQKNRLFYFKSVWSKLQSIGIRQHUKRVOLRE 600
QY 601 LSEAEVQRHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA 660
Db 601 LSEAEVQRHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA 660

QY 661 LFSVLNTERARRPGLLGASVLGLDDIHRWRTFVLVRAODPPPELVFVKVDVTGAYDTI 720
DB 661 LFSVLNTERARRPGLLGASVLGLDDIHRWRTFVLVRAODPPPELVFVKVDVTGAYDTI 720
QY 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
DB 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
QY 781 QETSPLDADVIEOSSINEASSGLFDVFLREWCHHAVIRGKSYVQCQIPOGSIILSTL 840
DB 781 QETSPLDADVIEOSSINEASSGLFDVFLREWCHHAVIRGKSYVQCQIPOGSIILSTL 840
QY 841 LCSLCYGDMEKLPAGIRRDGLLRLVDDFLLVTPHLLTHAKTFLRLTVRGVPEYGCVMNL 900
DB 841 LCSLCYGDMEKLPAGIRRDGLLRLVDDFLLVTPHLLTHAKTFLRLTVRGVPEYGCVMNL 900
QY 901 RKTVPNFPVEDEALGTAFAVQMAHGLFPWCGLLDTRTLEQSDYSSVARTSIRASLTF 960
DB 901 RKTVPNFPVEDEALGTAFAVQMAHGLFPWCGLLDTRTLEQSDYSSVARTSIRASLTF 960
QY 961 NRGFKAGNNRRKLFVLRUKCHSLFDLDQVNSLQVCTNIYKILLQAYRHHACVLOLP 1020
DB 961 NRGFKAGNNRRKLFVLRUKCHSLFDLDQVNSLQVCTNIYKILLQAYRHHACVLOLP 1020
QY 1021 FHOQVWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQMLCHQAFLL 1080
DB 1021 FHOQVWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQMLCHQAFLL 1080
QY 1081 KLTRHRVTVYVPLLGSLRTAQTLQSRKLPGLTTLTALEAAANPALPSDFKILD 1132
DB 1081 KLTRHRVTVYVPLLGSLRTAQTLQSRKLPGLTTLTALEAAANPALPSDFKILD 1132

RESULT 16
ABR58045
ID ABR58045 standard; protein; 1132 AA.
XX AC ABR58045;
XX DT 29-AUG-2003 (first entry)
XX DE Human telomerase reverse transcriptase.
XX KW Enzyme; human; telomerase reverse transcriptase; adipogenic capacity;
KW primary preadipocyte cell; adipogenesis; obesity; adipocytokine;
KW anorectic; adiponectin; insulin.
XX OS Homo sapiens.
XX PN WO2003031640-A2.
XX PD 17-APR-2003.
XX PF 07-OCT-2002; 2002WO-US031635.
XX PR 06-OCT-2001; 2001US-0327650P.
XX PR 06-OCT-2001; 2001US-0327651P.
XX PA (BOST-) BOSTON MEDICAL CENT CORP.
XX PI Kirkland J, Tchkonina T;
XX DR WPI; 2003-421278/39.
XX DR N-PSDB; ACC44482.
XX PT New primary preadipocyte strain expressing telomerase reverse
PT transcriptase, useful in research applications, screening assays,
PT clinical applications, and in the administration of therapeutic agents,
PT particularly for obesity.
XX PS Disclosure; Page 13; 53pp; English.
XX

CC The invention relates to the generation of primary preadipocyte cell
CC straining that expresse telomerase reverse transcriptase (TERT- the
CC catalytic subunit of telomerase), and maintain and/or enhance replicative
CC potential and maintain adipogenic capacity of the cell. This sequence
CC represents the TERT protein. The cell strain can be used in research to
CC study all aspect of adipogenesis, especially in relation to researching
CC treatments for e.g. obesity. The cell can also be used to identify
CC adipogenesis modulators for use as therapeutic agents such as hormones,
CC growth factors, cytokines, enzymes, cholesterol binding proteins,
CC cholesterol removing proteins or their combinations. Alternatively, the
CC therapeutic agent may be an adipocytokine, preferably adiponectin, or
CC insulin
XX SQ Sequence 1132 AA;
Query Match 100.0%; Score 5961; DB 6; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRILGPOGWRILVORGDPAAFPALVAQCILVCVPW 60
DB 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRILGPOGWRILVORGDPAAFPALVAQCILVCVPW 60
QY 61 DARPPPAAPSPRQVSCLEKELVARVLQRLCERGAKNVLAFFGALLDGGAGPPEAFTTSVR 120
DB 61 DARPPPAAPSPRQVSCLEKELVARVLQRLCERGAKNVLAFFGALLDGGAGPPEAFTTSVR 120
QY 121 SYLNTVTTDALRGSGANGLLLRVGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYLGA 180
DB 121 SYLNTVTTDALRGSGANGLLLRVGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYLGA 180
QY 181 ATQARPPPHASGPRRRILGGERAWNHSVREAGVPLGLPAGARRRGGSSASRSILPKRPRR 240
DB 181 ATQARPPPHASGPRRRILGGERAWNHSVREAGVPLGLPAGARRRGGSSASRSILPKRPRR 240
QY 241 GAAPEPERTVPGQGSWAHPGRTGRGDFCVSPARPAAEATSLGALSCTRHSHPVG 300
DB 241 GAAPEPERTVPGQGSWAHPGRTGRGDFCVSPARPAAEATSLGALSCTRHSHPVG 300
QY 301 ROHAGPPSTSRPPRWDTPCPVYAEKHFLYSSGDKQLRPSFLSSLPSTGARRL 360
DB 301 ROHAGPPSTSRPPRWDTPCPVYAEKHFLYSSGDKQLRPSFLSSLPSTGARRL 360
QY 361 VETIFLGSRPWMPGTPRRLPRLPORYQWMPRLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
DB 361 VETIFLGSRPWMPGTPRRLPRLPORYQWMPRLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
QY 421 PAAGVCAREKPGQSVAAPEEEDTDPRLVLQLLRQHSSPWQYVGFVFRACLRRLVPPGLWGS 480
DB 421 PAAGVCAREKPGQSVAAPEEEDTDPRLVLQLLRQHSSPWQYVGFVFRACLRRLVPPGLWGS 480
QY 481 RHNERRFLRNTKKEISLGKHAQLSLQELTWKMSVRDCAWLRSPGVCVCPAAEHLRBEI 540
DB 481 RHNERRFLRNTKKEISLGKHAQLSLQELTWKMSVRDCAWLRSPGVCVCPAAEHLRBEI 540
QY 541 LAKEFLHLMMSVYVVELLRSFFYVTTTFQKNRLFYFKSVMSKLSQSIGIRQHLKRVQRE 600
DB 541 LAKEFLHLMMSVYVVELLRSFFYVTTTFQKNRLFYFKSVMSKLSQSIGIRQHLKRVQRE 600
QY 601 LSEAEVQHREARPAALLTSRLRFTPKDGLRPIVNDYVVGARTFRREKRAELTSRVKA 660
DB 601 LSEAEVQHREARPAALLTSRLRFTPKDGLRPIVNDYVVGARTFRREKRAELTSRVKA 660
QY 661 LFSVLNTERARRPGLLGASVLGLDDIHRWRTFVLVRAODPPPELVFVKVDVTGAYDTI 720
DB 661 LFSVLNTERARRPGLLGASVLGLDDIHRWRTFVLVRAODPPPELVFVKVDVTGAYDTI 720
QY 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
DB 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
QY 781 QETSPLDADVIEOSSINEASSGLFDVFLREWCHHAVIRGKSYVQCQIPOGSIILSTL 840

Db 781 QETSPLEDAVVIVQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQIPOGSIILSTL 840
Qy 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900
Db 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900
Qy 901 RKTWVNPVDEALGGTAFAVQMPAHGLFPMCGLLLDTRTLEVSQSDYSSYARTSIRASLTF 960
Db 901 RKTWVNPVDEALGGTAFAVQMPAHGLFPMCGLLLDTRTLEVSQSDYSSYARTSIRASLTF 960
Qy 961 NRGFKAGRNRRKLFVGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
Db 961 NRGFKAGRNRRKLFVGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
Qy 1021 FHQVWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKGAAGPLPSEAQQWMLCHQAFLL 1080
Db 1021 FHQVWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKGAAGPLPSEAQQWMLCHQAFLL 1080
Qy 1081 KLTRHRVTVYVPLGLSLRTAQOLSRKLPGLTTLTALEAAANPALPSPDKTILD 1132
Db 1081 KLTRHRVTVYVPLGLSLRTAQOLSRKLPGLTTLTALEAAANPALPSPDKTILD 1132

RESULT 17

ADD21420
ID ADD21420 standard; protein; 1132 AA.
XX
AC ADD21420;
XX
DT 15-JAN-2004 (first entry)
XX
DE Human TERT protein related to continual cell growth.
XX
KW continual growth; cultured cell; cyclin dependent kinase; cdk4; cdk2;
KW cdk6; activating mutation; cell growth; cell division; cell cycle;
KW cancer-causing agent; continual growth-induced cell; enzyme; TERT;
KW telomerase; human.
XX
OS Homo sapiens.
XX
PN W02003044169-A2.
XX
PD 30-MAY-2003.
XX
PF 15-NOV-2002; 2002WO-US036729.
XX
PR 15-NOV-2001; 2001US-0334760P.
XX
PA (UTEM) UNIV TEMPLE.
XX
PI Reddy PE, Rane SG, Mettus RV;
XX
DR WFI; 2003-449813/42.
XX
PT A composition for reversibly inducing continual growth in normal cells
PT comprises a cyclin dependent kinase protein (e.g. cdk4, cdk2 or cdk6) or
PT its active fragment, derivative, homolog or analog, having an activating
PT mutation.
XX
PS Claim 16; Page 135-138; 77pp; English.
XX
CC This invention relates to a novel composition for inducing a reversible
CC state of a continual growth in cultured cells and comprises at least one
CC compound comprising a cyclin dependent kinase (cdk)4, cdk2 or cdk6
CC protein having an activating mutation. Growth and division of living
CC cells involve a regular series of events and processes that comprise the
CC cell cycle. Cyclin dependent kinases cdk2, cdk4 and cdk6 are involved in
CC the control of G1, the point at which cells irreversibly commit to DNA
CC synthesis and thus enter the cell cycle. The invention is useful in
CC reversibly inducing continual growth in normal cells and may allow the
CC screening of cancer-causing agents with the continual growth-induced
CC cells. The present sequence is that of the human TERT protein, the
CC catalytic subunit of telomerase, related to the invention. Note: Due to

CC an error in the specification or sequence listing, the Seq ID numbers
CC given in the disclosure do not correspond to those given in the sequence
CC listing. It is therefore unclear which Seq ID number corresponds to which
CC sequence and exactly which sequence is being claimed.
XX
SQ Sequence 1132 AA;
Query Match 100.0%; Score 5961; DB 7; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MPEAPCRVRSLLRSHYREVLPATFVRRLPGQGRHLVORGDPAPAFRALVAOCLVCVPW 60
Db 1 MPEAPCRVRSLLRSHYREVLPATFVRRLPGQGRHLVORGDPAPAFRALVAOCLVCVPW 60
Qy 61 DARPPPAASFRQVSCCLKELVARLQRLCERGAKNVLAFGFALLDARGGPPPAFTTSVR 120
Db 61 DARPPPAASFRQVSCCLKELVARLQRLCERGAKNVLAFGFALLDARGGPPPAFTTSVR 120
Qy 121 SYLNTVTVDALRGSGAWGLLLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 121 SYLNTVTVDALRGSGAWGLLLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Qy 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGSASRSLPLPKRPRR 240
Db 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGSASRSLPLPKRPRR 240
Qy 241 GAPEPERTPVGQSWAHFGRTRGSDRGFCVVSPARPAEEATSLGALSGTRHSHPSVG 300
Db 241 GAPEPERTPVGQSWAHFGRTRGSDRGFCVVSPARPAEEATSLGALSGTRHSHPSVG 300
Qy 301 RQHAGPPPTSPPRPMDTPCPVYAEATHFLYSSGDKQELRPSFLLSLRLPSLTGARRL 360
Db 301 RQHAGPPPTSPPRPMDTPCPVYAEATHFLYSSGDKQELRPSFLLSLRLPSLTGARRL 360
Qy 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQWRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQWRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Qy 421 PRAQVCAREKPOGSAVAAPEEDTDPRRLVQLLRQHSHPQVYGVFVRACTRLRLLVPPGLWGS 480
Db 421 PRAQVCAREKPOGSAVAAPEEDTDPRRLVQLLRQHSHPQVYGVFVRACTRLRLLVPPGLWGS 480
Qy 481 RHNERRFLNRTKKFISLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Db 481 RHNERRFLNRTKKFISLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Qy 541 LAKFLHLMMSVYVVELLRSFYVVTETTFQKNRLLFFYRKSVWSKLQSIGIRQHLKRVOLRE 600
Db 541 LAKFLHLMMSVYVVELLRSFYVVTETTFQKNRLLFFYRKSVWSKLQSIGIRQHLKRVOLRE 600
Qy 601 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMNDYVVGARTFRREKRAERLTSRKA 660
Db 601 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMNDYVVGARTFRREKRAERLTSRKA 660
Qy 661 LFSVLNRYEARPGLLGASVLGLDDIHRARWTFVLVRADQPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNRYEARPGLLGASVLGLDDIHRARWTFVLVRADQPPPELYFVKVDVTGAYDTI 720
Qy 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQAAHGHVRFKAFKSHVSTLTLDLPYMRQFVAHL 780
Db 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQAAHGHVRFKAFKSHVSTLTLDLPYMRQFVAHL 780
Qy 781 QETSPLEDAVVIVQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQIPOGSIILSTL 840
Db 781 QETSPLEDAVVIVQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQIPOGSIILSTL 840
Qy 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900
Db 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900
Qy 901 RKTWVNPVDEALGGTAFAVQMPAHGLFPMCGLLLDTRTLEVSQSDYSSYARTSIRASLTF 960
Db 901 RKTWVNPVDEALGGTAFAVQMPAHGLFPMCGLLLDTRTLEVSQSDYSSYARTSIRASLTF 960

Db 901 RKTVMNFPVEDEALGGTAFVQMPAHGLFPWCGLLDDTRTLEVSQDYSYARTSIRASLTF 960
 QY 961 NRGFKAGNMRRKLFGLVRLKCHSLFLDLQVNSLQVCTNLYKILLQAYRPHACVLQLP 1020
 Db 961 NRGFKAGNMRRKLFGLVRLKCHSLFLDLQVNSLQVCTNLYKILLQAYRPHACVLQLP 1020
 QY 1021 FHQQVWKNPFTFLRVISDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080
 Db 1021 FHQQVWKNPFTFLRVISDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080
 QY 1081 KLTRHRVTYVPLGLSLRTAQQLSRKLPCTTLTALEAANPALPSDFKTILD 1132
 Db 1081 KLTRHRVTYVPLGLSLRTAQQLSRKLPCTTLTALEAANPALPSDFKTILD 1132

RESULT 18

ADH72743

ID ADH72743 standard; protein; 1132 AA.

AC ADH72743;

XX ADH72743;

XX 25-MAR-2004 (first entry)

DT Human protein of the invention SEQ ID NO:19.

DE stem cell; cardiant; hepatotropic; nephrotropic; cytotstatic; neuroprotective; antiarthritic; antidiabetic; antiarteriosclerotic;

KW heart failure; leukaemia; neurodegenerative disease; diabetes;

KW arteriosclerosis; skeletal muscle; human.

XX Homo sapiens.

OS WO2003027281-A2.

XX 03-APR-2003.

XX 20-SEP-2002; 2002WO-JP009702.

XX 20-SEP-2001; 2001JP-00286332.

PR 09-MAY-2002; 2002JP-00133575.

XX (KYOW) KYOWA HAKKO KOGYO KK.

PA (TAMA/) TAMAKI T.

PA (ANDO/) ANDO K.

XX Tamaki T, Ando K, Akatsuka A, Nakamura Y, Hotta T, Sakurada K;

PI WPI; 2003-371925/35.

XX Pluripotent stem cells originating in skeletal muscle interstitial

PT tissue, useful in drugs for regenerating tissues and cells e.g. in

PT treating heart failure, leukemia, neurodegenerative diseases, and

PT diabetes.

XX Disclosure; SEQ ID NO 19; 29pp; Japanese.

PS The invention relates to novel pluripotent stem cells originating from a

XX skeletal muscle interstitial tissue. A cell of the invention has

CC cardiant, hepatotropic, nephrotropic, cytotstatic, and antiarteriosclerotic

CC activity. The cells are useful in drugs for regenerating tissues and

CC cells e.g. in treating heart failure, leukaemia, neurodegenerative

CC diseases, diabetes and arteriosclerosis. The pluripotent stem cells were

CC isolated from rat skeletal muscles after analysis of the various

CC components by culturing and staining, as well as by other biochemical

CC analysis. The present sequence is used in the exemplification of the

CC invention.

XX Sequence 1132 AA;

XX Query Match 100.0%; Score 5961; DB 7; Length 1132;

XX Best Local Similarity 100.0%; Pred. No. 0;

XX Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPRCRAVRSLLSHRYREVLPPLATFVRRLLPGQWRLVORGDPAAFRALVAQCLVCVPM 60
 Db 1 MPRAPRCRAVRSLLSHRYREVLPPLATFVRRLLPGQWRLVORGDPAAFRALVAQCLVCVPM 60
 QY 61 DARPPPAASFRQVSCSLKELVARVILORLCERGAKNVLAFGFALLDGAAGGPPPEAFTTSVR 120
 Db 61 DARPPPAASFRQVSCSLKELVARVILORLCERGAKNVLAFGFALLDGAAGGPPPEAFTTSVR 120
 QY 121 SYLPTNTVTDALRGSGAWGLLLRRVGDVLLVHLARCALFVLVAPSCAVQVCGPPLYQLGA 180
 Db 121 SYLPTNTVTDALRGSGAWGLLLRRVGDVLLVHLARCALFVLVAPSCAVQVCGPPLYQLGA 180
 QY 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGAPAGARRRRGGSSASRLPLPKRPRR 240
 Db 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGAPAGARRRRGGSSASRLPLPKRPRR 240
 QY 241 GAAPEPERTPVQGSWAHPGTRGPDGFCVWSPARPAEATSLGALSSTRHSHPSVG 300
 Db 241 GAAPEPERTPVQGSWAHPGTRGPDGFCVWSPARPAEATSLGALSSTRHSHPSVG 300
 QY 301 RQHAGPPSTSRPRPMDTPCPPVYAETKHFYSSGDKQELRPSFLLSSLRPSLTGARRL 360
 Db 301 RQHAGPPSTSRPRPMDTPCPPVYAETKHFYSSGDKQELRPSFLLSSLRPSLTGARRL 360
 QY 361 VETIFLGSRPWMPGTPRRLPLRPLQRYQWMPRLFLELIGNHAQCPYGVLLKTHCPLRAAVT 420
 Db 361 VETIFLGSRPWMPGTPRRLPLRPLQRYQWMPRLFLELIGNHAQCPYGVLLKTHCPLRAAVT 420
 QY 421 PAAGVCAREKPGQSVAAPEEEDTDPRLVOLLRHSSHPWQYGVFRACLRRLVPPGLWGS 480
 Db 421 PAAGVCAREKPGQSVAAPEEEDTDPRLVOLLRHSSHPWQYGVFRACLRRLVPPGLWGS 480
 QY 481 RHNERRFLRNTKFI SLGKHA KLSLQELTWKMSVRDCAWLRRRRPGVGCVPAAEHRLREEI 540
 Db 481 RHNERRFLRNTKFI SLGKHA KLSLQELTWKMSVRDCAWLRRRRPGVGCVPAAEHRLREEI 540
 QY 541 LAKFLHMLMSVYVVELLRSFFYVTTETFOKNRLFYRKSVWSKLSQSIGIRHQLRVOLRE 600
 Db 541 LAKFLHMLMSVYVVELLRSFFYVTTETFOKNRLFYRKSVWSKLSQSIGIRHQLRVOLRE 600
 QY 601 LSEAEVQRHREARPAALLTSRLRPIPKPDGLRPVNMVYVVGARTFRREKRAEHLTSRVKA 660
 Db 601 LSEAEVQRHREARPAALLTSRLRPIPKPDGLRPVNMVYVVGARTFRREKRAEHLTSRVKA 660
 QY 661 LFSVLNVERARRPGLLGASVLGLDDIHRARWRTFVLVRADQDPPPELYFVKVDVTGAYDTI 720
 Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRARWRTFVLVRADQDPPPELYFVKVDVTGAYDTI 720
 QY 721 PQDLRTEVIASIIKPNQTYCVRRYAVVQKAAHGHVKAFAKSHVSTLTDLPYMRQFVAHL 780
 Db 721 PQDLRTEVIASIIKPNQTYCVRRYAVVQKAAHGHVKAFAKSHVSTLTDLPYMRQFVAHL 780
 QY 781 QETSPLRDADVIBEQSSSINEASSGLFDVFLRFMCHHAVIRKGSYVQCQGIPOGSI LSTL 840
 Db 781 QETSPLRDADVIBEQSSSINEASSGLFDVFLRFMCHHAVIRKGSYVQCQGIPOGSI LSTL 840
 QY 841 LCSLCYGD MENKLFAGIRDDGLLLRLVDDFLVTHPLTHAKTFLTRLVGRVPEYGCVNL 900
 Db 841 LCSLCYGD MENKLFAGIRDDGLLLRLVDDFLVTHPLTHAKTFLTRLVGRVPEYGCVNL 900
 QY 901 RKTVMNFPVEDEALGGTAFVQMPAHGLFPWCGLLDDTRTLEVSQDYSYARTSIRASLTF 960
 Db 901 RKTVMNFPVEDEALGGTAFVQMPAHGLFPWCGLLDDTRTLEVSQDYSYARTSIRASLTF 960
 QY 961 NRGFKAGNMRRKLFGLVRLKCHSLFLDLQVNSLQVCTNLYKILLQAYRPHACVLQLP 1020
 Db 961 NRGFKAGNMRRKLFGLVRLKCHSLFLDLQVNSLQVCTNLYKILLQAYRPHACVLQLP 1020
 QY 1021 FHQQVWKNPFTFLRVISDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080
 Db 1021 FHQQVWKNPFTFLRVISDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080

QY 1081 KLTHRVTVYVPLLSRLTAQTLQSRKLPQTTLTALEAAANPALPSDFKTILD 1132
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
1081 KLTHRVTVYVPLLSRLTAQTLQSRKLPQTTLTALEAAANPALPSDFKTILD 1132

RESULT 19
ADG70114
ID ADG70114 standard; protein; 1132 AA.
XX
AC
XX
XX
DT 11-MAR-2004 (first entry)
XX
DE hTERT protein.
XX
KW cytosolic; gene therapy; reverse transcriptase-inhibitor; HIV-1;
KW human telomerase reverse transcriptase; hTERT; chimeric; catalytic site;
KW unregulated cellular growth; cancer; tumor.
XX
OS Homo sapiens.
XX
PN WO2003095605-A2.
XX
XX
PD 20-NOV-2003.
XX
PF 14-APR-2003; 2003WO-EP003874.
XX
PR 08-MAY-2002; 2002US-0378820P.
XX
PA (PHAA) PHARMACIA ITAL SPA.
XX
PI Moll J, Schnuchel A, Stouten P;
DR WPI: 2004-012095/01.
DR N-PSDB; ADG70113.
XX
PT New HIV-1 Reverse Transcriptase and human Telomerase Reverse
PT Transcriptase proteins and nucleic acids, useful in gene therapy or for
PT treating or preventing unregulated cellular growth, e.g. cancer cell or
PT tumor growth.
XX
PS Example 1; SEQ ID NO 4; 141pp; English.
XX
CC The invention relates to the isolation of compounds that bind and inhibit
CC the activity of HIV-1 reverse transcriptase (RT) or human telomerase
CC reverse transcriptase (hTERT). The method involves determining these
CC compounds using a HIV-1 RT/hTERT chimeric construct containing the
CC catalytic sites of each enzyme. The nucleic acid is useful for treating
CC or preventing unregulated cellular growth, including cancer cell and
CC tumor growth. It is also useful in gene therapy. Compounds that inhibit
CC telomerase activity can be used to treat cancer. The vectors of the
CC invention can be used to amplify DNA or RNA encoding HIV-RT/hTERT and/or
CC express DNA which encodes HIV-RT/hTERT. This sequence corresponds to the
CC human TERT protein.
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 8; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches:1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGWRLVORGDPAAPRALVAOCLVCVPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGWRLVORGDPAAPRALVAOCLVCVPW 60

QY 61 DARPPPAAPFRQVSCLELVARVLQRLCERGAQNVLAFAFALLDARGGPPFAFTTSVR 120
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
61 DARPPPAAPFRQVSCLELVARVLQRLCERGAQNVLAFAFALLDARGGPPFAFTTSVR 120

QY 121 SYLPNTVTDALRSGGAWGLLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLQLGA 180
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
121 SYLPNTVTDALRSGGAWGLLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLQLGA 180

QY 181 ATQARPPPHASGPRRLGCRANWHSVREAGVPLGLPAPGARRRGGSASRSLPLPKPRR 240
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
181 ATQARPPPHASGPRRLGCRANWHSVREAGVPLGLPAPGARRRGGSASRSLPLPKPRR 240

QY 241 GAAPEPERTVPGGSGWAHPGTRGSDRGFCVVSPPAPAEAEATSEALSGTRHSHPSVG 300
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
241 GAAPEPERTVPGGSGWAHPGTRGSDRGFCVVSPPAPAEAEATSEALSGTRHSHPSVG 300

QY 301 ROHHAGPPSTSRPPRWDTPCPVYAETHFLYSSGDKQOLRPSFLLSSLRPSLTGARRL 360
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
301 ROHHAGPPSTSRPPRWDTPCPVYAETHFLYSSGDKQOLRPSFLLSSLRPSLTGARRL 360

QY 361 VETIFLSRPMWPGTTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
361 VETIFLSRPMWPGTTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420

QY 421 PAAGVCAREKPGQSVAAPEEEDTPRLVOLLRQHSHPQVYGFVRACLRLVPPGLWGS 480
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
421 PAAGVCAREKPGQSVAAPEEEDTPRLVOLLRQHSHPQVYGFVRACLRLVPPGLWGS 480

QY 481 RHNERRFLRNTKKFISLGHKAKLSLOBLTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
481 RHNERRFLRNTKKFISLGHKAKLSLOBLTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540

QY 541 LAKFLEHLMSSVYVVELLRSPFYVTETTFQKNRLFYRKSVMSKLQSIGIRQHLKRVOLRE 600
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
541 LAKFLEHLMSSVYVVELLRSPFYVTETTFQKNRLFYRKSVMSKLQSIGIRQHLKRVOLRE 600

QY 601 LSEAEVROHREARPALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFREKKAERLTSRVKA 660
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
601 LSEAEVROHREARPALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFREKKAERLTSRVKA 660

QY 661 LFSVLNVERARRPGLLGASVLGLDDIHRARWTFVLRAODPPPELYFVKVDVTGAYDTI 720
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
661 LFSVLNVERARRPGLLGASVLGLDDIHRARWTFVLRAODPPPELYFVKVDVTGAYDTI 720

QY 721 PQDLRTEVIASIIKPQNTYCVRRYAVVQAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
721 PQDLRTEVIASIIKPQNTYCVRRYAVVQAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780

QY 781 QETSPLRDVAVIBQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYQCQGIPOGSIILSTL 840
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
781 QETSPLRDVAVIBQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYQCQGIPOGSIILSTL 840

QY 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRTLVRGVPBGCVVNL 900
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRTLVRGVPBGCVVNL 900

QY 901 RKTVMNFPVEDEALGCTAFVQMPAHGLFPWCGLLLDTRTLEVSQSYSSYARTSIRASLTF 960
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
901 RKTVMNFPVEDEALGCTAFVQMPAHGLFPWCGLLLDTRTLEVSQSYSSYARTSIRASLTF 960

QY 961 NRGFKAGRNMRKLFVGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
961 NRGFKAGRNMRKLFVGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020

QY 1021 FHQQVWKNPTFFLRLVSDTASLCYSTLKAKNAGMSLGAKGAGPLSEAVQWLCHQAFLL 1080
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
1021 FHQQVWKNPTFFLRLVSDTASLCYSTLKAKNAGMSLGAKGAGPLSEAVQWLCHQAFLL 1080

QY 1081 KLTHRVTVYVPLLSRLTAQTLQSRKLPQTTLTALEAAANPALPSDFKTILD 1132
Db |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
1081 KLTHRVTVYVPLLSRLTAQTLQSRKLPQTTLTALEAAANPALPSDFKTILD 1132

RESULT 20
ADG90599
ID ADG90599 standard; protein; 1132 AA.
XX
AC ADG90599;
XX
DT 25-MAR-2004 (first entry)
XX

Human TERT SEQ ID NO:2.
human; immune response; telomerase reverse transcriptase; TERT;
cytostatic; immunostimulant; cancer; cytotoxic T cell response.
Homo sapiens.
WO2004002408-A2.
08-JAN-2004.
24-JUN-2003; 2003WO-US019844.
27-JUN-2002; 2002US-0393295P.
(GERO-) GERON CORP.
Majumdar A, Ferber IA, Frolikis M, Wang Z;
WPI; 2004-071946/07.
N-PSDB; ADG90598.
Eliciting an immune response in a mammal specific for its own telomerase
reverse transcriptase (TERT), useful for treating or preventing cancer,
comprises administering a composition containing TERT of another
mammalian species.
Claim 66; SEQ ID NO 2; 44pp; English.
The invention relates to a novel method for eliciting an immune response
in a mammalian subject that is specific for its own telomerase reverse
transcriptase (TERT), comprising administering an immunogenic composition
containing a protein with at least 20 consecutive amino acids of TERT of
another mammalian species, or a nucleic acid encoding the protein. A
composition of the invention has cytostatic, and immunostimulant
activity. The protein or the nucleic acid encoding the protein is useful
in the manufacture of a medicament for the treatment of cancer in a human
or for eliciting a cytotoxic T cell response in a human.
Sequence 1132 AA;
Query Match 100.0%; Score 5961; DB 8; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAFRALVAQCLVCPW 60
DB 1 MPAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAFRALVAQCLVCPW 60
QY 61 DARPPAPAFSFRQVSKELVARVLQRLCERGAKNVLAFFGALLDARGGPEAFTTSVR 120
DB 61 DARPPAPAFSFRQVSKELVARVLQRLCERGAKNVLAFFGALLDARGGPEAFTTSVR 120
QY 121 SYLPTNTVDALRGSGAWGLLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPYQLGA 180
DB 121 SYLPTNTVDALRGSGAWGLLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPYQLGA 180
QY 181 ATQARPPPHASGRRRLGGERAWNSVREAGVPLGLPAPGARRRGSASRSPLPKRPRR 240
DB 181 ATQARPPPHASGRRRLGGERAWNSVREAGVPLGLPAPGARRRGSASRSPLPKRPRR 240
QY 241 GAAPEPRTFVGQSWAHFGRTRGSDRGFCVVSAPARPAEATSLGALSGRTHSPSVG 300
DB 241 GAAPEPRTFVGQSWAHFGRTRGSDRGFCVVSAPARPAEATSLGALSGRTHSPSVG 300
QY 301 ROHAGPPPTSPRPPDPTCPVVAETHYFLYSSGDKQLRPSFLLSLRPSLTGARRL 360
DB 301 ROHAGPPPTSPRPPDPTCPVVAETHYFLYSSGDKQLRPSFLLSLRPSLTGARRL 360
QY 361 VETIFLGRPMWPGTPRRRLPRLPQRYWQMRPLFLELLGNHQAOCYPGVLLKTHCPLRAAVT 420
DB 361 VETIFLGRPMWPGTPRRRLPRLPQRYWQMRPLFLELLGNHQAOCYPGVLLKTHCPLRAAVT 420

QY 421 PAAGVCAREKPOGSSVAAPEEEDTDPRRLVOLLROHSSPMQVYGFVACLRRLVPPGLWGS 480
DB 421 PAAGVCAREKPOGSSVAAPEEEDTDPRRLVOLLROHSSPMQVYGFVACLRRLVPPGLWGS 480
QY 481 RHNERFRFLNTKKFISLGHAKLSQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLRESI 540
DB 481 RHNERFRFLNTKKFISLGHAKLSQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLRESI 540
QY 541 LAKFLHMLMSVYVVELLSRFFVYVTTTFOKNRLFYFRKSVMSKLSQISIGIRQHLKRVLRE 600
DB 541 LAKFLHMLMSVYVVELLSRFFVYVTTTFOKNRLFYFRKSVMSKLSQISIGIRQHLKRVLRE 600
QY 601 LSEAEVROHREARPAALLTSRLRFIPKPDGLRPIVNDYVVGARTFRREKRAERLTSRVKA 660
DB 601 LSEAEVROHREARPAALLTSRLRFIPKPDGLRPIVNDYVVGARTFRREKRAERLTSRVKA 660
QY 661 LFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLVRVAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLVRVAQDPPPELYFVKVDVTGAYDTI 720
QY 721 PODRLTEVIASIIKPONTYCVRRYAVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
DB 721 PODRLTEVIASIIKPONTYCVRRYAVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
QY 781 QETSLRDAVVIQESSLSNEASSGLFDVFLRPMCHHAVIRKSVVQCOGIPQGSILSTL 840
DB 781 QETSLRDAVVIQESSLSNEASSGLFDVFLRPMCHHAVIRKSVVQCOGIPQGSILSTL 840
QY 841 LCSLCYGMENKLFAGIRRDGILLRLVDDFLLVTPHLTHAKTFLRTLVRGVEYCVVNL 900
DB 841 LCSLCYGMENKLFAGIRRDGILLRLVDDFLLVTPHLTHAKTFLRTLVRGVEYCVVNL 900
QY 901 RKTVNVFVEDEALGGTAFVQMPAHLFPWCGLLDTRTLEVQSDYSYARTSIRASLTF 960
DB 901 RKTVNVFVEDEALGGTAFVQMPAHLFPWCGLLDTRTLEVQSDYSYARTSIRASLTF 960
QY 961 NRGFKAGNMRRKLFVLRKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
DB 961 NRGFKAGNMRRKLFVLRKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
QY 1021 FHQQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
DB 1021 FHQQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
QY 1081 KLTRHRVTYVLLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132
DB 1081 KLTRHRVTYVLLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132
RESULT 21
ADI82172
ID ADI82172 standard; protein; 1132 AA.
XX AC ADI82172;
XX DT 22-APR-2004 (first entry)
XX DE Human telomerase reverse transcriptase.
XX KW Human; embryonic stem cell; pluripotent stem cell; abnormal cell growth;
XX OS malignancy; differentiation.
XX OS Homo sapiens.
XX FN US2003224411-A1.
XX PD 04-DEC-2003.
XX PF 13-MAR-2003; 2003US-00388578.
XX PR 13-MAR-2003; 2003US-00388578.
XX PA (STAN/) STANTON L W.

(BRAN/) BRANDENBERGER R.
(GOLD/) GOLD J D.
(IRVI/) IRVING J M.
(MAND/) MANDALAM R.
(MOKM/) MOK M.
(SHEL/) SHELTON D.

Stanton LW, Brandenberger R, Gold JD, Irving JM, Mandalam R;
Mok M, Shelton D;

WPI; 2004-119701/12.

Assessing culture of undifferentiated primate pluripotent stem cells by detecting expression of markers e.g., Zic family member 3, other than human telomerase reverse transcriptase/octamer binding transcription factor.

Claim 1: SEQ ID NO 2; 106pp: English.

The invention relates to assessing a culture of undifferentiated primitive pluripotent stem cells (pPS, e.g. embryonic stem cells), involving detecting expression of markers (MR) e.g. Zic family member 3 (ZIC3), as given in specification, other than human telomerase reverse transcriptase (hTERT) or octamer binding transcription factor (Oct)3/4, or a marker (MR2) such as crypto or podocalyxin-like protein and hTERT and/or Oct3/4 or second marker chosen from (MR2). Also included are maintaining (M2) pPS cells in a pluripotent state (involves causing them to express one of the following markers (MR3) at a higher level, FOXO1A, ZIC3, hypothetical protein FLJ20582, Forkhead box H1 (FOXH1), Zinc finger protein, Hsai2, KRAB-zinc finger protein SGFI-1 or zinc finger protein of cerebellum ZIC2, or any other marker (MR4) chosen from PHD protein Jade-1 (Jade-1), kruppel-like zinc finger protein (ZNF300), etc., as given in the specification), causing pPS cells to differentiate into a particular tissue type by causing them to express one of the markers chosen from (MR3) or (MR4) (or markers chosen from GATA binding protein 3 (GATA3), core promoter element binding protein (COPEB), etc., as given in the specification), maintaining pPS cells in a pluripotent state (involves culturing pPS cells or their progeny in the presence of a normally secreted protein that is encoded by a gene that down-regulated upon differentiation of human embryonic stem (hES) cells, chosen from Fibrillin 3 gene, LEFT B gene, ZIC3 gene, BPAHL gene, etc., as given in the specification), causing pPS cells to differentiate (involves culturing pPS cells or their progeny in the presence of a normally secreted protein that is encoded by a gene that up-regulated upon differentiation of hES cells, chosen from p311 protein gene, Tax interaction protein 1 gene, KIA00853 protein gene, keratin 19 (KRT 19) gene, etc., as given in the specification), causing an encoding sequence to be preferentially expressed in undifferentiated pPS cells, causing an encoding sequence to be preferentially expressed in differentiated cells, sorting (M4) differentiated cells from less differentiated cells (involves separating cells expressing a surface marker chosen from any one of MR1 from cells not expressing the marker), causing pPS cells to proliferate without differentiation, identifying genes that are up or down regulated during differentiation of pPS cells, and a kit (I) for assessing a culture of pPS cells by M1. The method (M1) is useful for assessing culture of undifferentiated primitive pluripotent stem cells and for assessing the growth characteristics of a cell population. The cell population has been obtained by culturing cells from human blastocyst or from a human patient suspected of having a clinical condition related to abnormal cell growth. The method further involves determining whether the cell population is pluripotent from the marker expression and assessing whether the patient has a malignancy from the marker expression. The present sequence is a protein whose expression is down regulated in pluripotent stem cells.

Sequence 1132 AA;

1 MPRAPRCRAVRSLRLSHYREVLPPLATFVRRLGPOGWRLVORGDPAAFRALVAOCLVCVPW 60

Db	1	MPRAPRCRAVRSLLRSHRYEVLPLATFVRVLGGQGNRLVQGGPPAFAFVLAQCLVCVPW	60
Qy	61	DARPPPAAPFROVSCUKELVARVLQRLCBRGAKNVLAFGFALLDARGGPPFAFTTSVR	120
Db	61	DARPPPAAPFROVSCUKELVARVLQRLCBRGAKNVLAFGFALLDARGGPPFAFTTSVR	120
Qy	121	SYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLLIARCALFVLVAPSCAYVCGPPLYOLGA	180
Db	121	SYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLLIARCALFVLVAPSCAYVCGPPLYOLGA	180
Qy	181	ATQARPPPHASGRRRLGCERANWHSVREAGVPLGIPAPCARRRGSSASRSLPLKRP	240
Db	181	ATQARPPPHASGRRRLGCERANWHSVREAGVPLGIPAPCARRRGSSASRSLPLKRP	240
Qy	241	GAPEPERTVPGQGSWAHPGTRGSDRGFCVVSPPARPAEATSYLEGALSGTRHSHPSVG	300
Db	241	GAPEPERTVPGQGSWAHPGTRGSDRGFCVVSPPARPAEATSYLEGALSGTRHSHPSVG	300
Qy	301	ROHHAGPPSTSRPPRMDTPCPPVYAEKHFLLSYSSGDKQELRPSFLSSLRPSLTGARRL	360
Db	301	ROHHAGPPSTSRPPRMDTPCPPVYAEKHFLLSYSSGDKQELRPSFLSSLRPSLTGARRL	360
Qy	361	VEIIFLGSRPMWPGTPRRLDRLQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT	420
Db	361	VEIIFLGSRPMWPGTPRRLDRLQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT	420
Qy	421	PAGVCAREXPOQGSVAAPBEEDTPRLVOLLQKHSSPMQVGFVRACTLRRLVPPGLWGS	480
Db	421	PAGVCAREXPOQGSVAAPBEEDTPRLVOLLQKHSSPMQVGFVRACTLRRLVPPGLWGS	480
Qy	481	RHNERRELRNTKXIFSLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI	540
Db	481	RHNERRELRNTKXIFSLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI	540
Qy	541	LAKFLHLMVYVVELLRSFFYTTTFQKNRLFYTRKSWKLSQSIGIRQHILKRVOLRE	600
Db	541	LAKFLHLMVYVVELLRSFFYTTTFQKNRLFYTRKSWKLSQSIGIRQHILKRVOLRE	600
Qy	601	LSAEVQHQREARPAALLTSRLRTPKPDGURPIVNM DYVVGARTFRREKRAERLTSRVKA	660
Db	601	LSAEVQHQREARPAALLTSRLRTPKPDGURPIVNM DYVVGARTFRREKRAERLTSRVKA	660
Qy	661	LFSVLNYERARRPCLLGASVLGLDDIHRAWRTFVLVRADPPPELVFKVDVTGAYDTI	720
Db	661	LFSVLNYERARRPCLLGASVLGLDDIHRAWRTFVLVRADPPPELVFKVDVTGAYDTI	720
Qy	721	PQRLTEVIASIIKPQNTYCVRYAVVQKAAGHVRKAFKSHVSTLTDLPQYMRQFVAHL	780
Db	721	PQRLTEVIASIIKPQNTYCVRYAVVQKAAGHVRKAFKSHVSTLTDLPQYMRQFVAHL	780
Qy	781	QETSPLRDVAVIEQSSSLNEASSGLFDVFLRFWCHAVRIRGKSYVQCQIGIPGSI	840
Db	781	QETSPLRDVAVIEQSSSLNEASSGLFDVFLRFWCHAVRIRGKSYVQCQIGIPGSI	840
Qy	841	LCSLCYGDMENKLFAGIRRDGLLLRLVDVDFLLVTPHLTHAKTFLRLVRGVPYGC	900
Db	841	LCSLCYGDMENKLFAGIRRDGLLLRLVDVDFLLVTPHLTHAKTFLRLVRGVPYGC	900
Qy	901	RKTVMNFPVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVOGSDYSSYARTS	960
Db	901	RKTVMNFPVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVOGSDYSSYARTS	960
Qy	961	NRGFKAGRNMRKLFVLRILKCHSLFDLDQVNSLQVTCNIIYKILLQAVRFHACVLOLP	1020
Db	961	NRGFKAGRNMRKLFVLRILKCHSLFDLDQVNSLQVTCNIIYKILLQAVRFHACVLOLP	1020
Qy	1021	FHOQVKNPFTFLRVISDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL	1080
Db	1021	FHOQVKNPFTFLRVISDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL	1080
Qy	1081	KLTRHRYVYVPLLSLSTAQTLQSRKLPGLTTLTALEAAANPALPSPFOTKILD	1132

Db 1081 KLTRHRTVYVPLGLSLRTAQOLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132

RESULT 22
AAW61350
ID AAW61350 standard; protein; 1154 AA.
XX AC
XX AAW61350;
DT 25-MAR-2003 (revised)
DT 12-OCT-1998 (first entry)
XX DE
XX Human telomerase protein 2 (TP2).
XX TP2; human; telomerase protein 2; cancer; AIDS; ageing; therapy.
XX Homo sapiens.
XX WO9821343-A1.
XX PD
XX 22-MAY-1998.
XX PF
XX 13-NOV-1997; 97WO-US021248.
XX PR
XX 15-NOV-1996; 96US-00751189.
XX PR
XX 11-JUN-1997; 97US-00873039.
XX PR
XX 16-OCT-1997; 97US-00951733.
XX PA
XX (AMGE-) AMGEN INC.
XX PA
XX (AMGE-) AMGEN CANADA INC.
XX PI
XX Harrington LA, Robinson MO;
XX WPI; 1998-297946/26.
XX N-PSDB; AAV27876.
XX
XX New nucleic acid encoding human telomerase protein-2 - used for
XX regulating telomerase activity, e.g. for treating cancer or acquired
XX immune deficiency syndrome.
XX
XX Claim 1e; Fig 9; 150pp; English.
XX
XX This polypeptide comprises human telomerase protein 2 (TP2), a novel
XX protein of the telomerase complex. Its amino acid sequence was deduced
XX from a composite (see AAV27876) of isolated cDNA clones 32 (see AAV27872)
XX and TP2-15 (see AAV27875), obtained from a human colon tumour cell line
XX LIM1963 cDNA. Expressing TP2 in a cell is used to increase telomerase
XX activity and thus proliferation for treatment of e.g. HIV infection, AIDS
XX and ageing disorders, while expressing an inactive mutant of TP2 (or
XX molecule antisense to the gene) is used to decrease telomerase activity,
XX e.g. for treatment of cancer. TP2 polypeptides can also be used to screen
XX for agents that inhibit TP2 activity or its binding to TRIP1 (see
XX CC AAW61347) or telomerase RNA, potentially useful therapeutically, also to
XX raise specific antibodies useful in immunoassays and therapeutically as
XX inhibitors. Also contemplated are transgenic animals in which the TP2
XX gene has been inactivated or is overexpressed. TP2 polypeptides are
XX administered i.v., s.c. or orally, or they are delivered from engineered
XX cells or gene therapy vectors. (Updated on 25-MAR-2003 to correct PR
XX field.)
XX
XX Sequence 1154 AA;
Query Match 100.0%; Score 5961; DB 2; Length 1154;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPAPRCRAVRSLRSHYREVLPPLATFVRRRLGPGQGWRLVQRGDPAAFRALVAQCVCVFW 60
Db 23 MPAPRCRAVRSLRSHYREVLPPLATFVRRRLGPGQGWRLVQRGDPAAFRALVAQCVCVFW 82
QY 61 DARPPPAAPSFRQVSCLEKELVARVLQRLCERGAKNVLAFGFALLDARGGPPPEATTTSVR 120
Db 83 DARPPPAAPSFRQVSCLEKELVARVLQRLCERGAKNVLAFGFALLDARGGPPPEATTTSVR 142

QY 121 SYLPNTVTDTALRGSGAWGLLRRVGGDVLVHLARCALFVLVAPSCAYVCGPPPLYQLGA 180
Db 143 SYLPNTVTDTALRGSGAWGLLRRVGGDVLVHLARCALFVLVAPSCAYVCGPPPLYQLGA 202
QY 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGGSASRSPLPKRPRR 240
Db 203 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGGSASRSPLPKRPRR 262
QY 241 GAAPEPERTVQGSWAHPGRTGRGFCVVSAPAEAEATSLEGALSGTRHSHPSVG 300
Db 263 GAAPEPERTVQGSWAHPGRTGRGFCVVSAPAEAEATSLEGALSGTRHSHPSVG 322
QY 301 ROHAGAPSTSRPPRPMDTPCPVYAEAKHFLYSSGDKQLRPSFLLSLRSLTGARRL 360
Db 323 ROHAGAPSTSRPPRPMDTPCPVYAEAKHFLYSSGDKQLRPSFLLSLRSLTGARRL 382
QY 361 VETIFLGSRPWMPGTFRRLPRLPQRYWQWRPLFLELLGNHACQPYGVLLKTHCPRAAVT 420
Db 383 VETIFLGSRPWMPGTFRRLPRLPQRYWQWRPLFLELLGNHACQPYGVLLKTHCPRAAVT 442
QY 421 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRQHSHPQVYGFVRACLRLRVPGLMGS 480
Db 443 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRQHSHPQVYGFVRACLRLRVPGLMGS 502
QY 481 RHNERFLRNTKCFISLKGKAKLSLOELTWKMSVRDCAWLRSPGVGCVPAAEHRLREI 540
Db 503 RHNERFLRNTKCFISLKGKAKLSLOELTWKMSVRDCAWLRSPGVGCVPAAEHRLREI 562
QY 541 LAKFLHLMMSVYVVELLSRFFVTTTFQKRLFFYKSVMSKLOSIGIRQHLKRVQURE 600
Db 563 LAKFLHLMMSVYVVELLSRFFVTTTFQKRLFFYKSVMSKLOSIGIRQHLKRVQURE 622
QY 601 LSEAEVROHREARPAALLTSRLRFTPKPDGLRPIVNMDYVVGARTFRREKRAERLTSRKA 660
Db 623 LSEAEVROHREARPAALLTSRLRFTPKPDGLRPIVNMDYVVGARTFRREKRAERLTSRKA 682
QY 661 LFSVLNVERARRPGLIGASVLGLDDIHRAMETFVLVRQAODPPPELYFVKVDVTAYDTI 720
Db 683 LFSVLNVERARRPGLIGASVLGLDDIHRAMETFVLVRQAODPPPELYFVKVDVTAYDTI 742
QY 721 PQDRLETVIASIIPQNTYCVRRYAVVQAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL 780
Db 743 PQDRLETVIASIIPQNTYCVRRYAVVQAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL 802
QY 781 QETSPLRDAVIEOSSSLNEASSGLFDVFLRPMCHHAVIRGKSVYVQCGIPQGSILSTL 840
Db 803 QETSPLRDAVIEOSSSLNEASSGLFDVFLRPMCHHAVIRGKSVYVQCGIPQGSILSTL 862
QY 841 LCSLCYGDMEKLFAGIRRDGLLRVDDTLVTPHLTHAKTFLRTLVRGPEYGCVNVL 900
Db 863 LCSLCYGDMEKLFAGIRRDGLLRVDDTLVTPHLTHAKTFLRTLVRGPEYGCVNVL 922
QY 901 RKTVVNPFVEDEALGGTAFVQMPAHGLFPWCGLLDDTLTLEVSQSDYSYARTSIRASLTF 960
Db 923 RKTVVNPFVEDEALGGTAFVQMPAHGLFPWCGLLDDTLTLEVSQSDYSYARTSIRASLTF 982
QY 961 NRGFKAGNMRKLFVGLURLKCHSLFDLQVNSLQTVCTNIYKILLLOAYRPHACVLQLP 1020
Db 983 NRGFKAGNMRKLFVGLURLKCHSLFDLQVNSLQTVCTNIYKILLLOAYRPHACVLQLP 1042
QY 1021 FHOQWKNPTFFLRVISDTASLCYSILKAKNAGSLGAKGAGPLPSEAVOMLCHOAELL 1080
Db 1043 FHOQWKNPTFFLRVISDTASLCYSILKAKNAGSLGAKGAGPLPSEAVOMLCHOAELL 1102
QY 1081 KLTRHRTVYVPLGLSLRTAQOLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132
Db 1103 KLTRHRTVYVPLGLSLRTAQOLSRKLPGLTTLTALEAAANPALPSDFKTILD 1154

RESULT 23
AAW47008
ID AAW47008 standard; protein; 1189 AA.

XX AAW47008;
AC 13-AUG-1998 (first entry)
DT Glutathione-S-transferase and hTERT fusion protein 8.
XX
DE Human; telomerase reverse transcriptase; hTERT; TERT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
XX
OS Synthetic.
OS Homo sapiens.
XX
XX Key Location/Qualifiers
FH Misc-difference 22..23
FT /note= "enterokinase cleavage site"
FT
XX GB2317891-A.
PN
XX 08-APR-1998.
PD
XX 01-OCT-1997; 97GB-00020890.
XX
XX 01-OCT-1996; 96US-00724643.
PR 18-APR-1997; 97US-00844419.
XX 25-APR-1997; 97US-00846017.
PR 06-MAY-1997; 97US-00851843.
XX 09-MAY-1997; 97US-00854050.
PR 14-AUG-1997; 97US-00911312.
XX 14-AUG-1997; 97US-00912951.
PR 14-AUG-1997; 97US-00915503.
XX
XX (GERO-) GERON CORP.
PA (UYTE-) UNIV TECHNOLOGY CORP.
PA
XX Cecch TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB,
PI Andrews WH;
XX WPI; 1998-171633/16.
XX
XX Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.
XX
XX Example 6; Page 234-235; 387pp; English.
XX
XX The present sequence represents a fusion protein from an example of the
CC present invention which describes human telomerase reverse transcriptase
CC (hTERT). The present invention also describes the following methods: (A)
CC determining whether a test compound is a modulator of hTERT, by detecting
CC the change in hTERT recombinant protein or polynucleotide, on
CC administration of the compound; (B) preparation of recombinant telomerase
CC by contacting a protein preparation of hTERT with a telomerase RNA
CC component; (C) detection of the hTERT RNA or protein in a sample by
CC binding a relevant probe to the sample and detecting the complex formed
CC or in the case of RNA detection, amplifying the product and correlating
CC the presence of complex or amplification product with presence of hTERT in
CC the sample; and (D) increasing the proliferation of a vertebrate cell by
CC increasing hTERT expression; and (E) the use of an agent that causes an
CC increase in cell vertebrate cell proliferation to create a medicament
CC that inhibits ageing. A protein preparation of hTERT and the
CC polynucleotide encoding hTERT can be used in the manufacture of
CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
CC telomerase activity can be used to treat conditions that are associated
CC with high telomerase activity. A protein preparation of hTERT can also be
XX used in the new methods
XX
XX Sequence 1189 AA;

Query Match 100.0%; Score 5961; DB 2; Length 1189;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPAPRCRAVRSLLRSHYREVLPPLATFVRRLPGQWRLVORGDPAAPRALVAOCLVCVPW 60
DB |||||MPAPRCRAVRSLLRSHYREVLPPLATFVRRLPGQWRLVORGDPAAPRALVAOCLVCVPW 117
QY 61 DAPPPAAPSFRQVSCLELVARVLOLRCERGAKNVLAFCFALLDGGARPPPAFTTSVR 120
DB |||||DAPPPAAPSFRQVSCLELVARVLOLRCERGAKNVLAFCFALLDGGARPPPAFTTSVR 177
QY 121 SYLPTNTVTDALRSGGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYOLGA 180
DB |||||SYLPTNTVTDALRSGGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYOLGA 237
QY 181 ATOARPPPHASGPRRLGCERAWNHSVRBAGVPLGLPAPGARRRGSASRLPLPKRPRR 240
DB |||||ATOARPPPHASGPRRLGCERAWNHSVRBAGVPLGLPAPGARRRGSASRLPLPKRPRR 297
QY 241 GAPEPERTPVGQSWAHGRTGRGSDRGFCVVSAPAPAEATSLGALSGTSHSPSVG 300
DB |||||GAPEPERTPVGQSWAHGRTGRGSDRGFCVVSAPAPAEATSLGALSGTSHSPSVG 357
QY 301 RQHHAGPPSTSRPRPMDTPCPVYAEETHFLYSSGDKQOLRPSFLLSSLRPSLTGARRL 360
DB |||||RQHHAGPPSTSRPRPMDTPCPVYAEETHFLYSSGDKQOLRPSFLLSSLRPSLTGARRL 417
QY 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLPLELLGNHAQCPYGVLLKTHCPLRAAVT 420
DB |||||VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLPLELLGNHAQCPYGVLLKTHCPLRAAVT 477
QY 421 PAAGVCAREKPGQSWAAPBEEDTDPRRLVQLRQHSPPQVYGFVRACLRLRPLVPPGLWGS 480
DB |||||PAAGVCAREKPGQSWAAPBEEDTDPRRLVQLRQHSPPQVYGFVRACLRLRPLVPPGLWGS 537
QY 481 RHNERFRLNTKFKFISLGKHAKLSQLBTWMSVRDCAWLRRSPGVGCVPAAEHRLREEL 540
DB |||||RHNERFRLNTKFKFISLGKHAKLSQLBTWMSVRDCAWLRRSPGVGCVPAAEHRLREEL 597
QY 541 LAKFLHMLSVYVVELLRSFYVTTTFOKNRFFFYRKSVMSKLSQSIGIROHLKRVOLRE 600
DB |||||LAKFLHMLSVYVVELLRSFYVTTTFOKNRFFFYRKSVMSKLSQSIGIROHLKRVOLRE 657
QY 601 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMVYVVGARTFRREKRAELTSRVKA 660
DB |||||LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMVYVVGARTFRREKRAELTSRVKA 717
QY 661 LFSVLNVERARRPGLLGASVGLDLDIHRARWTEFLRVRAQDPPPELYFVKVDVTGAYDTI 720
DB |||||LFSVLNVERARRPGLLGASVGLDLDIHRARWTEFLRVRAQDPPPELYFVKVDVTGAYDTI 777
QY 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
DB |||||PQDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 837
QY 781 QETSPLRDVAVTEOSSLINEASGLFDVFLRFMCHHAVIRGKSYVQCQIGIPOGSIILSTL 840
DB |||||QETSPLRDVAVTEOSSLINEASGLFDVFLRFMCHHAVIRGKSYVQCQIGIPOGSIILSTL 897
QY 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDLFLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
DB |||||LCSLCYGDMEKLFAGIRRDGLLLRLVDLFLVTPHLTHAKTFLRTLVRGVPYGCVVNL 957
QY 901 RKTIVNFPVEDEALGCTAFVQMPAHGLFPWCGLLDTRTLLEVOQSDYSSVARTSIRASLTF 960
DB |||||RKTIVNFPVEDEALGCTAFVQMPAHGLFPWCGLLDTRTLLEVOQSDYSSVARTSIRASLTF 1017
QY 961 NRGFKAGRNMRRKLFVGLRLKCHSLFLDLQVNSLQVTCNNIYKILLQAYRFFACVLQLP 1020
DB |||||NRGFKAGRNMRRKLFVGLRLKCHSLFLDLQVNSLQVTCNNIYKILLQAYRFFACVLQLP 1077
QY 1021 EHQOVWKNPTFFLRVLSDDTASLCYSTLKAKNAGMSLGAKGAAGPLPSEAVQWMLCHOAFL 1080
DB |||||EHQOVWKNPTFFLRVLSDDTASLCYSTLKAKNAGMSLGAKGAAGPLPSEAVQWMLCHOAFL 1137
QY 1081 KLTRHRTVTVPLIGSLRRTAQTLQSRKLPGLTTLTALEAAANPALPSDFKTILD 1132

|||||
1138 KLTRHRTVYVLLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSDFKTLTD 1189
Db
RESULT 24
AAW47000
ID AAW47000 standard; protein; 1285 AA.
XX
AC AAW47000;
XX
DT 13-AUG-1998 (first entry)
XX
DE HIS tagged thioredoxin moiety and full length hTERT fusion protein.
XX
KW Human; telomerase reverse transcriptase; hTERT; TERT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
XX
OS Synthetic.
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Misc-difference 119..120
FT Region /note= "enterokinase cleavage site"
FT /label= hTERT
FT /note= "full length human telomerase reverse
FT transcriptase"
XX
PN GB2317891-A.
XX
XX 08-APR-1998.
PD
XX 01-OCT-1997; 97GB-00020890.
XX
XX 01-OCT-1996; 96US-00724643.
PR 18-APR-1997; 97US-00844419.
PR 25-APR-1997; 97US-00846017.
PR 06-MAY-1997; 97US-00851843.
PR 09-MAY-1997; 97US-00854050.
PR 14-AUG-1997; 97US-00911312.
PR 14-AUG-1997; 97US-00912951.
PR 14-AUG-1997; 97US-00915503.
XX
(GERO-) GERON CORP.
(UYTE-) UNIV TECHNOLOGY CORP.
XX
XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB,
PI Andrews WH;
XX
XX WPI; 1998-171633/16.
XX
PT Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.
XX
XX Example 6; Page 223; 387pp; English.
PS
XX
XX The present sequence represents a fusion protein from an example of the
XX present invention which describes human telomerase reverse transcriptase
XX (hTERT). The present invention also describes the following methods: (A)
XX determining whether a test compound is a modulator of hTERT, by detecting
XX the change in hTERT recombinant protein or polynucleotide, on
XX administration of the compound; (B) preparation of recombinant telomerase
XX by contacting a protein preparation of hTERT with a telomerase RNA
XX component; (C) detection of the hTERT RNA or protein in a sample by
XX binding a relevant probe to the sample and detecting the complex formed
XX or in the case of RNA detection, amplifying the product and correlating
XX the presence of complex or amplification product with presence of hTERT in
XX the sample; and (D) increasing the proliferation of a vertebrate cell by
XX increasing hTERT expression; and (E) the use of an agent that causes an
XX increase in cell vertebrate cell proliferation to create a medicament
XX that inhibits ageing. A protein preparation of hTERT and the
XX polynucleotide encoding hTERT can be used in the manufacture of

CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
CC telomerase activity can be used to treat conditions that are associated
CC with high telomerase activity. A protein preparation of hTERT can also be
CC used in the new methods
XX
SQ Sequence 1285 AA;
Query Match 99.9%; Score 5955; DB 2; Length 1285;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSLLRSHYREVLPPLATFVRRLGPGQWRVLVQRGDPAAFRALVAQCLVCVPM 60
Db 154 MPRAPRCRAVRSLLRSHYREVLPPLATFVRRLGPGQWRVLVQRGDPAAFRALVAQCLVCVPM 213
QY 61 DARPPAAPSPRQVSCLEKELVARVQLRCLERCAGKAVLAFGPFALLDGARGGPPPEAFTTSVR 120
Db 214 DARPPAAPSPRQVSCLEKELVARVQLRCLERCAGKAVLAFGPFALLDGARGGPPPEAFTTSVR 273
QY 121 SYLPNTVTDALRGSGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 274 SYLPNTVTDALRGSGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 333
QY 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGLPAPGARRRGGSASRSPLPKRPRR 240
Db 334 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGLPAPGARRRGGSASRSPLPKRPRR 393
QY 241 GAAPPERTPVQGGWAHPGTRGSDRGFCVVSPPARPAEATSLEGALSGTRHSHPSVG 300
Db 394 GAAPPERTPVQGGWAHPGTRGSDRGFCVVSPPARPAEATSLEGALSGTRHSHPSVG 453
QY 301 ROHAGAPSTSRPPRPMDTPCPVYAEVKHFLYSSGDKQLRPSLLSLRPSLTGARRL 360
Db 454 ROHAGAPSTSRPPRPMDTPCPVYAEVKHFLYSSGDKQLRPSLLSLRPSLTGARRL 513
QY 361 VETIFLGSRPWMPGTPRRLPRLPQRYQMRPLFLLELLGNHAQCPYGVLLKTHCPRAAVT 420
Db 514 VETIFLGSRPWMPGTPRRLPRLPQRYQMRPLFLLELLGNHAQCPYGVLLKTHCPRAAVT 573
QY 421 PAAGVCAREKPCGGSVAAPPEEDTPRRLVQLLRQHSHPWQYGVFRACLRRLRVLPPGLWGS 480
Db 574 PAAGVCAREKPCGGSVAAPPEEDTPRRLVQLLRQHSHPWQYGVFRACLRRLRVLPPGLWGS 633
QY 481 RHNERFLRNTKFTISLGHKAKLSIQLTWMKSVPRDCAWLRSPGVCVPAEHLRBEI 540
Db 634 RHNERFLRNTKFTISLGHKAKLSIQLTWMKSVPRDCAWLRSPGVCVPAEHLRBEI 693
QY 541 LAKFLHMLMSVYVVELLSRFFYVTTTTFQKNRLFYRKSVMKLSQSIGIRQHLKRVQURE 600
Db 694 LAKFLHMLMSVYVVELLSRFFYVTTTTFQKNRLFYRKSVMKLSQSIGIRQHLKRVQURE 753
QY 601 LSEAEVROHREARPAALLTSRLRFPKPDGLRPIVNMVYVVGARTPRRKRABRLTSRVKA 660
Db 754 LSEAEVROHREARPAALLTSRLRFPKPDGLRPIVNMVYVVGARTPRRKRABRLTSRVKA 813
QY 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRQAQDPPPELYFVKVDVTCAYDTI 720
Db 814 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRQAQDPPPELYFVKVDVTCAYDTI 873
QY 721 PODRLTEVIASIIKPQNTYCVRRYAVQKAAHGHVRKAFKSHVSTLTLDQPMRQFVAHL 780
Db 874 PODRLTEVIASIIKPQNTYCVRRYAVQKAAHGHVRKAFKSHVSTLTLDQPMRQFVAHL 933
QY 781 QETSPLRDADVIEOSSSLNEASSGLFDVFLRFMCHHAVIRGKSVYVQCGIPQGSILSTL 840
Db 934 QETSPLRDADVIEOSSSLNEASSGLFDVFLRFMCHHAVIRGKSVYVQCGIPQGSILSTL 993
QY 841 LCSLCYGDMEKNLFGAIRRDLGLLRLLRVDLFTVPLHTHAKTFTLRTLVRGVPEYGCVVNL 900
Db 994 LCSLCYGDMEKNLFGAIRRDLGLLRLLRVDLFTVPLHTHAKTFTLRTLVRGVPEYGCVVNL 1053
QY 901 RKTWNPFVEDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVQSDYSYARTSTRASLTTF 960
|||||

Db 1054 RKTVMNPPVDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVOSSDYSSYARTSIRASLTF 1113
Qy 961 NRGFKAGRNMRRLKFGVLRKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
Db 1114 NRGFKAGRNMRRLKFGVLRKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1173
Qy 1021 FHOQVKNPTFFLRVISTASLCSYILKAKNAGMSLGAKGAGPLPSEAVQWICHQAFLL 1080
Db 1174 FHOQVKNPTFFLRVISTASLCSYILKAKNAGMSLGAKGAGPLPSEAVQWICHQAFLL 1233
Qy 1081 KLTRHRVTVYVPLLSLRTAQTOLSRKLPCTTLTALEAANPALPSPDKTILD 1132
Db 1234 KLTRHRVTVYVPLLSLRTAQTOLSRKLPCTTLTALEAANPALPSPDKTILD 1285

RESULT 25
AAW71376
ID AAW71376 standard; protein; 1132 AA.
AC AAW71376;
XX
XX 04-DEC-1998 (first entry)
DT
DT
DE Human telomerase catalytic subunit referred to as hEST2.
XX
XX Catalytic subunit; human; telomerase; telomere maintenance; diagnosis;
KW treatment; cancer.
XX
XX Homo sapiens.
OS
XX
XX WO9837181-A2.
PN
XX
XX 27-AUG-1998.
PD
XX
XX 20-FEB-1998; 98WO-US003404.
PF
XX
XX 20-FEB-1997; 97US-0038750P.
PR 20-MAY-1997; 97US-0047151P.
PR 01-AUG-1997; 97US-0054549P.
PR 14-AUG-1997; 97US-0055762P.
PR 30-OCT-1997; 97US-0064322P.
XX
XX (WHED) WHITEHEAD INST BIOMEDICAL RES.
PA
XX
XX Counter CM, Meyerson M, Weinberg RA;
PI
XX
XX WPI; 1998-495367/42.
DR
XX
XX N-PSDB; AAV60320.
PT
XX
XX New isolated human telomerase catalytic sub-unit gene - used to develop
PT products for increasing or reducing the life span of cells such as cancer
PT cells or transformed cells.
XX
XX Claim 5; Fig 6; 96pp; English.
PS
XX
XX The present sequence represents the catalytic subunit of a human
CC telomerase holoenzyme. Disruption of the telomerase gene alters telomere
CC maintenance. The DNA is essential for telomerase activity, and the
CC protein is physically associated with telomerase and a constituent of
CC active telomerase complex. The products can be used for increasing or
CC reducing the lifespan of cells such as cancer cells or transformed cells.
CC They can also be used in the diagnosis and treatment of malignancies. In
CC addition, cells with a longer lifespan can be transplanted into or
CC grafted onto an individual (e.g. as skin grafts, as systems for delivery
CC of therapeutic proteins, such as hormones and enzymes), to whom they
CC provide therapeutic benefit
XX
XX Sequence 1132 AA;

Query Match 99.9%; Score 5954; DB 2; Length 1132;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MPRAPRCRAVRSLLRSHYREVLFPLATFVRRLPGQWRLVQRGDPAAPRALVAOCLVCVPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLFPLATFVRRLPGQWRLVQRGDPAAPRALVAOCLVCVPW 60
Qy 61 DARPPAASFRVSCIKELVARVLORLCERGAKNVLAFCFALLDARGGPPFAFTTSVR 120
Db 61 DARPPAASFRVSCIKELVARVLORLCERGAKNVLAFCFALLDARGGPPFAFTTSVR 120
Qy 121 SYLPTNTVTALRGSGAWGLLLRRVGDVLLVHLLARCALFVLVAPSCAYQVCGPPLYOLGA 180
Db 121 SYLPTNTVTALRGSGAWGLLLRRVGDVLLVHLLARCALFVLVAPSCAYQVCGPPLYOLGA 180
Qy 181 ATQARPPPHASGPRRLRGGERAWNHSVREAGVPLGLPAPGARRRGGSASLSLPLPKRPRR 240
Db 181 ATQARPPPHASGPRRLRGGERAWNHSVREAGVPLGLPAPGARRRGGSASLSLPLPKRPRR 240
Qy 241 GAPEPERTPVGOGSWAHPCRTGCPDSRGFCVVSAPAPAEATSLGALSCTRHSPSVG 300
Db 241 GAPEPERTPVGOGSWAHPCRTGCPDSRGFCVVSAPAPAEATSLGALSCTRHSPSVG 300
Qy 301 RQHHAGPPSTSRPPRPWDTPCPVVAETKHFLYSSGDKEQLRPSFLLSSLRPSLTGARRL 360
Db 301 RQHHAGPPSTSRPPRPWDTPCPVVAETKHFLYSSGDKEQLRPSFLLSSLRPSLTGARRL 360
Qy 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Qy 421 PAAGVCAREKPGQSVAAPEEEDTDPRLVOLLROHSSPWQVYGFVRACLRLVPPGLWGS 480
Db 421 PAAGVCAREKPGQSVAAPEEEDTDPRLVOLLROHSSPWQVYGFVRACLRLVPPGLWGS 480
Qy 481 RHNERRFLRNTKKFISLGHAKLSLOBLTWKMSVRDCAMLRSPGVCGVPAAEHRLREEI 540
Db 481 RHNERRFLRNTKKFISLGHAKLSLOBLTWKMSVRDCAMLRSPGVCGVPAAEHRLREEI 540
Qy 541 LAKFLHMLSVMYVVELLSRFFVYTTTTFQKNRLLFFYRKSVMSKLQSIGIRQHLKRVLRE 600
Db 541 LAKFLHMLSVMYVVELLSRFFVYTTTTFQKNRLLFFYRKSVMSKLQSIGIRQHLKRVLRE 600
Qy 601 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFRREKAEHLTSRVKA 660
Db 601 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFRREKAEHLTSRVKA 660
Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLRAODPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLRAODPPPELYFVKVDVTGAYDTI 720
Qy 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL 780
Db 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL 780
Qy 781 QETSPLRDVAVIQQSSSLNEASSGLFDVFLRFMCHHAVIRGKSVYQCQIGIPGSSILSTL 840
Db 781 QETSPLRDVAVIQQSSSLNEASSGLFDVFLRFMCHHAVIRGKSVYQCQIGIPGSSILSTL 840
Qy 841 LCSLCYGDMEKLFAGIRDDGLLLRVDVDFLLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900
Db 841 LCSLCYGDMEKLFAGIRDDGLLLRVDVDFLLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900
Qy 901 RKTVMNPPVDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVOSSDYSSYARTSIRASLTF 960
Db 901 RKTVMNPPVDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVOSSDYSSYARTSIRASLTF 960
Qy 961 NRGFKAGRNMRRLKFGVLRKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
Db 961 NRGFKAGRNMRRLKFGVLRKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
Qy 1021 FHOQVKNPTFFLRVISTASLCSYILKAKNAGMSLGAKGAGPLPSEAVQWICHQAFLL 1080
Db 1021 FHOQVKNPTFFLRVISTASLCSYILKAKNAGMSLGAKGAGPLPSEAVQWICHQAFLL 1080
Qy 1081 KLTRHRVTVYVPLLSLRTAQTOLSRKLPCTTLTALEAANPALPSPDKTILD 1132

DB 1081 KLTRHRVTVYVLLGSLRTAQQLSRKLFQTTTLTALEAANPALPSDFKTLID 1132

RESULT 26
AAV00627

ID AAV00627 standard; protein; 1132 AA.

XX AAV00627;

AC AAV00627;

DT 26-JUL-1999 (first entry)

DE Human telomerase protein sequence.

XX Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
XX stem cell differentiation; organ regeneration; organ differentiation.

OS Homo sapiens.

XX W09901560-A1.

PN 14-JAN-1999.

PD 01-JUL-1998; 98WO-US013835.

PP 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.

XX (CMB-) CAMBIA BIOSYSTEMS LLC.

XX Kilian A, Bowtell D;
XX WPI; 1999-106060/09.
XX N-PSDB; AAX18254.

XX New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.

XX Claim 19; Fig 1; 134pp; English.

XX This sequence is the human telomerase of the invention. Primers that
CC amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC nerve cell or brain cell growth following injury

XX Sequence 1132 AA;

Query Match 99.9%; Score 5954; DB 2; Length 1132;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MPRAFCRAVRLLSHREVLPATFVRRLLGPGQWRLLVQRGDPAAAFALVAQCLVCPW 60
DB 1 MPRAFCRAVRLLSHREVLPATFVRRLLGPGQWRLLVQRGDPAAAFALVAQCLVCPW 60

QY 61 DARPPAAPSPQVSCLEKELVARVLRQRCERGAKNVLAFGFALLDGAARGPPEAFTTSVR 120

DB 61 DARPPAAPSPQVSCLEKELVARVLRQRCERGAKNVLAFGFALLDGAARGPPEAFTTSVR 120

QY 121 SYLNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYVCGPPPLYQLGA 180

DB 121 SYLNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYVCGPPPLYQLGA 180

QY 181 ATQARPPPHASGPRRLGGERAWNHSREAGVPLGLPAPGARRRGSGASRSPLPKRPRR 240

DB 181 ATQARPPPHASGPRRLGGERAWNHSREAGVPLGLPAPGARRRGSGASRSPLPKRPRR 240

QY 241 GAAPERTPVCGGSAHPGTRGSDRGFCVVSFARPAEAEATSEALSGTRHSHPSVG 300

DB 241 GAAPERTPVCGGSAHPGTRGSDRGFCVVSFARPAEAEATSEALSGTRHSHPSVG 300

QY 301 ROHAGPSTSPRPDPWTGPPVVAETKHFYSSGDEQELRPSFLLSLRPSLTGARRL 360

DB 301 ROHAGPSTSPRPDPWTGPPVVAETKHFYSSGDEQELRPSFLLSLRPSLTGARRL 360

QY 361 VETIFLGRPMWPGTPRRLPRLPORVWQMRPLFLELLGNHQAQCPYGVLLKTHCPJRAAVT 420

DB 361 VETIFLGRPMWPGTPRRLPRLPORVWQMRPLFLELLGNHQAQCPYGVLLKTHCPJRAAVT 420

QY 421 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRHSSPWQVYGFVRACLRRLVPPGLNGS 480

DB 421 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRHSSPWQVYGFVRACLRRLVPPGLNGS 480

QY 481 RHNERFLNTYKFFISLGHAKLSLOELTWKSVRDCAWLRSSPGVCPVAAEHLRREEI 540

DB 481 RHNERFLNTYKFFISLGHAKLSLOELTWKSVRDCAWLRSSPGVCPVAAEHLRREEI 540

QY 541 LAKFLHMLMSVYVVELLSRFFVVTETTFQKURLFFYKSVMSKLOSTIGIROHLKRVQURE 600

DB 541 LAKFLHMLMSVYVVELLSRFFVVTETTFQKURLFFYKSVMSKLOSTIGIROHLKRVQURE 600

QY 601 LSEAEVROHREARPALTSRLRFIPKPDGLRPIVNMDDYVVGARTFRREKRAERLTSRKA 660

DB 601 LSEAEVROHREARPALTSRLRFIPKPDGLRPIVNMDDYVVGARTFRREKRAERLTSRKA 660

QY 661 LPSVLNVERARPPGLGASVLGLDDIHRWRTFVLVRADQPPPELTVKVDVTGAYDTI 720

DB 661 LPSVLNVERARPPGLGASVLGLDDIHRWRTFVLVRADQPPPELTVKVDVTGAYDTI 720

QY 721 PDRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRAFKSHVSTLTDLPYMQFVAHL 780

DB 721 PDRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRAFKSHVSTLTDLPYMQFVAHL 780

QY 781 QETSPLDADVIEOSSSINASSGLFDVFLRFMCHHVRIRGKSYVQCQGIPOGSIILSTL 840

DB 781 QETSPLDADVIEOSSSINASSGLFDVFLRFMCHHVRIRGKSYVQCQGIPOGSIILSTL 840

QY 841 LCSLCYGDMEKLPAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGVPYGCYVNL 900

DB 841 LCSLCYGDMEKLPAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGVPYGCYVNL 900

QY 901 RKTIVNPFVEDEALGGTAFVQMPAAGLFPWCGLLDRTLEVDSDYSSYARTSTRASLTTF 960

DB 901 RKTIVNPFVEDEALGGTAFVQMPAAGLFPWCGLLDRTLEVDSDYSSYARTSTRASLTTF 960

QY 961 NRGFAGRNRRKLFGLVLRKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVQLQP 1020

DB 961 NRGFAGRNRRKLFGLVLRKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVQLQP 1020

QY 1021 FHOQVKNPTFFLVRISDTSALCVSILKAKNAGMSLGAKGAGPLPSEAVQWICHQAFLL 1080

DB 1021 FHOQVKNPTFFLVRISDTSALCVSILKAKNAGMSLGAKGAGPLPSEAVQWICHQAFLL 1080

QY 1081 KLTRHRVTVYVLLGSLRTAQQLSRKLFQTTTLTALEAANPALPSDFKTLID 1132

DB 1081 KLTRHRVTVYVLLGSLRTAQQLSRKLFQTTTLTALEAANPALPSDFKTLID 1132

ID	AA00638 standard; protein; 1132 AA.	
XX	AA00638;	
AC		
DT	26-JUL-1999 (first entry)	
XX	Truncated telomerase protein sequence.	
DE		
XX	Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;	
KW	neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;	
KW	smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;	
KW	stem cell differentiation; organ regeneration; organ differentiation.	
XX		
OS	Homo sapiens.	
OS	Synthetic.	
XX		
PN	WO9901560-A1.	
XX		
PD	14-JAN-1999.	
XX		
PF	01-JUL-1998; 98WO-US013835.	
XX		
PR	01-JUL-1997; 97US-0051410P.	
PR	21-JUL-1997; 97US-0053018P.	
PR	21-JUL-1997; 97US-0053329P.	
PR	04-AUG-1997; 97US-0054642P.	
PR	09-SEP-1997; 97US-0058287P.	
XX		
PA	(CAMB-) CAMBIA BIOSYSTEMS LLC.	
XX		
PI	Kilian A, Bowtell D;	
XX		
DR	WPI; 1999-106060/09.	
DR	N-PSDB; AAX18266.	
XX		
PT	New isolated vertebrate telomerase genes - used to develop products for	
PT	treating cancers or for organ regeneration, nerve cell or brain cell	
PT	growth following injury or bone marrow transplantation.	
XX		
PS	Claim 4; Fig 11f-i; 134pp; English.	
XX		
CC	This sequence is a truncated human telomerase of the invention. Primers	
CC	that amplify the telomerase coding sequence can be used in a method for	
CC	diagnosing cancer in a patient. The telomerase can be used for detection,	
CC	diagnosis and drug screening. Inhibitors of telomerase activity can be	
CC	used to treat cancers such as melanomas, other skin cancers,	
CC	neuroblastomas, breast carcinomas, colon carcinomas, leukemias,	
CC	lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin	
CC	growths. Enhancers of telomerase may be used to stimulate stem cell	
CC	proliferation and differentiation (expansion of haematopoietic stem cells	
CC	could be administered in the bone marrow transplant context). As well,	
CC	many tissues have stem cells. Proliferation of these cells may be useful	
CC	in wound healing, hair growth, treatment of disease such as Wilm's	
CC	tumour, organ regeneration or differentiation after injury or diseases,	
CC	nerve cell or brain cell growth following injury	
XX		
SQ	Sequence 1132 AA;	
	Query Match 99.9%; Score 5954; DB 2; Length 1132;	
	Best Local Similarity 99.9%; Pred. No. 0;	
	Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;	
QY	1 MPRAPCRVRSLLRSHYREVLPLATFVRRLGQGWRLVORGDPAAFRALVAOCLVCVPW 60	
DB	1 MPRAPCRVRSLLRSHYREVLPLATFVRRLGQGWRLVORGDPAAFRALVAOCLVCVPW 60	
QY	61 DARPPPAAPSFRQVSCIKELVARVLQRLCERGAKNVLAFGFALLDARGGPPPAFTTSVR 120	
DB	61 DARPPPAAPSFRQVSCIKELVARVLQRLCERGAKNVLAFGFALLDARGGPPPAFTTSVR 120	
QY	121 SYLPTNTVDALRGSGAWGALLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLYOLGA 180	
DB	121 SYLPTNTVDALRGSGAWGALLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLYOLGA 180	

QY	181	ATQAREPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPGARRRRGSASRSLPLPKRPRR	240
DB	181	ATQAREPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPGARRRRGSASRSLPLPKRPRR	240
QY	241	GAAPERTPVGGSWAHGRTGRGSDRGFCVVSPPARPAEATSLGALSCTRHSHPSVG	300
DB	241	GAAPERTPVGGSWAHGRTGRGSDRGFCVVSPPARPAEATSLGALSCTRHSHPSVG	300
QY	301	RQHAGPPSTSPRPDPWTPCPVYAETHFYLSSGDKQLRPSFLLSLSPSLTGARRL	360
DB	301	RQHAGPPSTSPRPDPWTPCPVYAETHFYLSSGDKQLRPSFLLSLSPSLTGARRL	360
QY	361	VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGLKTKHCPRAAVT	420
DB	361	VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGLKTKHCPRAAVT	420
QY	421	PAAGVCAREKPOGSVAAPBEEDTDPRRLVQLLRQHSSPMQVYGVFVRACLRLVPPGLWGS	480
DB	421	PAAGVCAREKPOGSVAAPBEEDTDPRRLVQLLRQHSSPMQVYGVFVRACLRLVPPGLWGS	480
QY	481	RHNERPFLNTKKFISLGKHAKLSLOELTWKMSVRDCAWLRBSPGVCVPAEHRLEEEI	540
DB	481	RHNERPFLNTKKFISLGKHAKLSLOELTWKMSVRDCAWLRBSPGVCVPAEHRLEEEI	540
QY	541	LAKFLHMLSVVYVVELLRSFFVYVTTTFQKNRLLFFYRKSVWSKLQSIGIRQHLKRVOLRE	600
DB	541	LAKFLHMLSVVYVVELLRSFFVYVTTTFQKNRLLFFYRKSVWSKLQSIGIRQHLKRVOLRE	600
QY	601	LSEAEVQRHREARPAALLTSRLRPIPKPDGLRPIVNMVYVVGARTFRREKRAELTSRVKA	660
DB	601	LSEAEVQRHREARPAALLTSRLRPIPKPDGLRPIVNMVYVVGARTFRREKRAELTSRVKA	660
QY	661	LFSVLNVERARRPGLLGASVGLGDDIHRARWRTFLVRADQDPPELYFVKVDVTGAYDTI	720
DB	661	LFSVLNVERARRPGLLGASVGLGDDIHRARWRTFLVRADQDPPELYFVKVDVTGAYDTI	720
QY	721	PODRLTEVIASIIKPONTYCVRRYAVVQKAAHGHVRFKFSHVSTLTDLPYMRQFVAHL	780
DB	721	PODRLTEVIASIIKPONTYCVRRYAVVQKAAHGHVRFKFSHVSTLTDLPYMRQFVAHL	780
QY	781	QETSPURDVAVIEQSSSLNEASSGLPDPVFLRFMCHHAVIRGKSVYQCGIPQGSILSTL	840
DB	781	QETSPURDVAVIEQSSSLNEASSGLPDPVFLRFMCHHAVIRGKSVYQCGIPQGSILSTL	840
QY	841	LCSLCYGDMENKLFAGIRRDGILLRLVDDPFLVTPHLTHAKTFLRLVRGVPYGCVVNL	900
DB	841	LCSLCYGDMENKLFAGIRRDGILLRLVDDPFLVTPHLTHAKTFLRLVRGVPYGCVVNL	900
QY	901	RKTVNVPVEDEALGQTAFOVMPAHGLFPWCGLLLDTRILEVQSDYSSVARTSIRASLTF	960
DB	901	RKTVNVPVEDEALGQTAFOVMPAHGLFPWCGLLLDTRILEVQSDYSSVARTSIRASLTF	960
QY	961	NRGFKAGRNNRKLFGVRLKCHSLFDLQVNSLQVTCNIIYKILLQAYRFHACVQLQP	1020
DB	961	NRGFKAGRNNRKLFGVRLKCHSLFDLQVNSLQVTCNIIYKILLQAYRFHACVQLQP	1020
QY	1021	FHQQWKNPTFLRVISDTSILKAKNAGMSLGAKAGAGPLSEAVQWICHQAFLL	1080
DB	1021	FHQQWKNPTFLRVISDTSILKAKNAGMSLGAKAGAGPLSEAVQWICHQAFLL	1080
QY	1081	KLTRHRVTVPVLLGSLRTAQTLQSLPGLTTLTALEAANPALPSPFKTILD	1132
DB	1081	KLTRHRVTVPVLLGSLRTAQTLQSLPGLTTLTALEAANPALPSPFKTILD	1132
	RESULT 28		
	AA028401		
ID	AA028401	standard; protein; 1132 AA.	
XX	AA028401;		
XX	22-SEP-1999 (first entry)		

Human EST2 protein sequence.

EST2; proliferative capacity; cellular proliferation; decubitus ulcer; telomerase-activating therapeutic agent; cell life-span extension; venous disease; venous stasis ulcer; excessive pressure; arterial ulcer; tissue regeneration enhancer; atherosclerosis; therapy.

Homo sapiens.

WO935243-A2.

15-JUL-1999.

12-JAN-1999; 99WO-US000682.

12-JAN-1998; 98US-0071220P.

13-JAN-1998; 98US-0071455P.

21-APR-1998; 98US-00063657.

(COLD-) COLD SPRING HARBOR LAB.

Hannon GJ, Wang J, Beach DH;

WPI; 1999-444196/37.

N-P5DB; AAX89424.

Increasing proliferative capacity of cells useful for promoting wound healing.

Claim 3; Page 65-70; 73pp; English.

This sequence is the human EST2 protein, and can be used in the method of the invention. The method is for increasing the proliferative capacity of cells, and comprises contacting the cell with a telomerase-activating therapeutic agent (TARA). The method can be used for extending the life-span of cells, e.g. by increasing the number of mitotic divisions. They can be used for e.g. the extension of skin or other epithelial cell cultures or grafts, the expansion of mesenchymal cell cultures or grafts, and the expansion of chondrocyte or osteocyte cultures or grafts. They can be applied to e.g. neuronal, haematopoietic, epithelial, pancreatic, hepatic, chondrocytic and osteocytic stem and progenitor cells in vivo, in vitro or ex vivo protocols. The methods can be used for promoting the healing of wounds resulting from e.g. surgery, burns, inflammation or irritation or ulcers resulting from e.g. venous disease (venous stasis ulcers), excessive pressure (decubitus ulcers) or arterial ulcers. They can also be used to enhance tissue regeneration processes, e.g. of the skin, hair and/or fingernails. They can also be used for treating age-related conditions, e.g. atrophy of the skin through loss of extracellular matrix homeostasis in dermal fibroblasts, age-related macular degeneration caused by accumulation of lipofuscin and upregulation of a neuronal survival factor in retinal pigmented epithelial (RPE) cells, and atherosclerosis caused by loss of proliferative capacity and overexpression of hypertensive and thrombotic factors in endothelial cells. Expanded populations of normal or genetically engineered rejuvenated cells could be used for autologous or allogeneic cell and gene therapy. They can also be used for prolonging the lifespan of a culture of normal cells or tissue being used to secrete therapeutic or other commercially significant proteins and products

Sequence 1132 AA;

Query Match 99.9%; Score 5954; DB 2; Length 1132;

Best Local Similarity 99.9%; Pred. No. 0;

Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MPAPPCRAVRSLLRSHYREVLPATFVRRLLGQWRLLVQRGDPAAPRALVAQCLVCVPW 60

DB 1 MPAPPCRAVRSLLRSHYREVLPATFVRRLLGQWRLLVQRGDPAAPRALVAQCLVCVPW 60

QY 61 DARPPPAAPSFQVSCCLKELVARLQRLCERCAKNVLAFFGALLDGARGPPEAFTTSVR 120

DB 61 DARPPPAAPSFQVSCCLKELVARLQRLCERCAKNVLAFFGALLDGARGPPEAFTTSVR 120

XX
AC AAY96566;
XX DT 12-SEP-2000 (first entry)
XX DE hEST2, a human telomerase catalytic subunit homologue.
XX hEST2; telomerase; catalytic subunit; reverse transcriptase; life-span;
KW retinoblastoma; p53; tumour suppressor; inhibitor; arteriosclerosis;
KW proliferation; immortal; tumour therapy; macular degeneration;
KW activator. INK4.
XX
XX Homo sapiens.
OS
XX WO200031238-A2.
PN
XX
XX 02-JUN-2000.
PD
XX 24-NOV-1999; 99WO-US027907.
PF
XX 25-NOV-1998; 98US-0109891P.
PR 17-FEB-1999; 99US-0120549P.
XX
XX (GENE-) GENETICA INC.
PA
XX Hannon GJ, Beach DH;
PI WPI; 2000-400055/34.
XX N-PSDB; AAA29388.
DR
XX
XX New method for increasing the proliferative capacity of cell lines
PT comprises administering agents reversibly activating telomerase activity
PT and reversibly inactivating Rb/INK4 and/or p53 pathways useful in
PT treating age related diseases.
PT
XX
XX Claim 14; Page 116-119; 123pp; English.
PS
XX
XX This protein, designated hEST2, is a human telomerase catalytic subunit
CC homologue of yeast Est2p and Euplotes p123. hEST2 is a member of the
CC reverse transcriptase family of enzymes. The invention concerns methods
CC and reagents for extending the life-span, e.g. the number of mitotic
CC divisions, of a cell. The method relies on activation of a telomerase
CC activity and inhibition of one or both of a retinoblastoma (Rb)/INK4
CC pathway or a p53 pathway. Phosphorylation of Rb by cyclin-dependent
CC kinases, cdk4 and cdk6, releases the cells into the division cycle.
CC Binding of INK4 family members, e.g. the tumour suppressor p16INK4a,
CC inhibits kinase activity and results in growth arrest. Rb inactivators
CC can selectively and reversibly inactivate an Rb/INK4 pathway, especially
CC an Rb/p16INK4a pathway. The oncoprotein MDM2 is a cellular inhibitor of
CC Rb/E2F function and the p53 tumour suppressor and can also be used in the
CC methods. Other molecules which can be used include cdk4 or cdk6 mutants.
CC In particular, a cdk4 mutant is one which differs from at one or more of
CC residues K22, R24, H95 and/or D97. Additional constructs include a
CC papilloma virus E7 protein, or other viral oncoprotein which bypasses Rb
CC and/or p53. Antisense constructs of the Rb and p16INK4a genes may also be
CC used. The methods are useful for increasing the proliferative capacity of
CC cells. The cells are subsequently of use in pharmaceutical and cosmetic
CC preparations used to treat conditions related to (premature) ageing, e.g.
CC macular degeneration and arteriosclerosis. The cells can also be used to
CC replace tumour cell lines in vitro and for studies on biochemical and
CC physiological aspects of growth and differentiation. Long lived
CC (immortal) cells could also be of use in the production of normal or
CC genetically engineered biotechnology products
XX
SQ Sequence 1132 AA;
Query Match 99.9%; Score 5954; DB 3; Length 1132;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
Qy 1 MPRAPRCRAVRSLLRSHYREVLPLATFVRRLGPGWRLVQRGDPAPRALVAQCLVCPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLPLATFVRRLGPGWRLVQRGDPAPRALVAQCLVCPW 60

Qy 61 DARPPPAAPSFQVSCLEKELVARVLQRLCERGAQNVLAFCGALLDGDGARGPPPEAFTTSVR 120
Db 61 DARPPPAAPSFQVSCLEKELVARVLQRLCERGAQNVLAFCGALLDGDGARGPPPEAFTTSVR 120
Qy 121 SYLPTNTVDALRGSGAWGLLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLYOLGA 180
Db 121 SYLPTNTVDALRGSGAWGLLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLYOLGA 180
Qy 181 ATQARPPPHASGPRRLRGCEANWHSVREAGVPLGLPAPGARRRGGSASRSLPLPKPARR 240
Db 181 ATQARPPPHASGPRRLRGCEANWHSVREAGVPLGLPAPGARRRGGSASRSLPLPKPARR 240
Qy 241 GAAPERTPTVGGGSAHWPGRTRGSDRGFCVVSPPARPAEATSELEGALSCTHSHPSVG 300
Db 241 GAAPERTPTVGGGSAHWPGRTRGSDRGFCVVSPPARPAEATSELEGALSCTHSHPSVG 300
Qy 301 RQHHAGPPSTSRPRPMDTPCPVYAEATHKFLYSSGDKQOLRPSFLISSLRPSLTGARRL 360
Db 301 RQHHAGPPSTSRPRPMDTPCPVYAEATHKFLYSSGDKQOLRPSFLISSLRPSLTGARRL 360
Qy 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Qy 421 PAAGVCAREKPGQSVAAPEEEDTPRRLVOLLRQHSSPMQVYGFVRACLRLRLLVPPGLWGS 480
Db 421 PAAGVCAREKPGQSVAAPEEEDTPRRLVOLLRQHSSPMQVYGFVRACLRLRLLVPPGLWGS 480
Qy 481 RHNERPLRNTKFIISLGKHAQLSLQELTWKMSVRDCAWLRRSPGVCVPAAEHRLREEI 540
Db 481 RHNERPLRNTKFIISLGKHAQLSLQELTWKMSVRDCAWLRRSPGVCVPAAEHRLREEI 540
Qy 541 LAKFLHMLSVVVELLRSFFVYTTETFOKNRLLFFYRKSVWSKLQSTIGIQHLKRVOLRE 600
Db 541 LAKFLHMLSVVVELLRSFFVYTTETFOKNRLLFFYRKSVWSKLQSTIGIQHLKRVOLRE 600
Qy 601 LSEAEVRQREARPAALLTSRLRIPKPDGLRPIVNMNDYVVGARTFRREKAEALRTSVKA 660
Db 601 LSEAEVRQREARPAALLTSRLRIPKPDGLRPIVNMNDYVVGARTFRREKAEALRTSVKA 660
Qy 661 LFSVLNVERARRPGLLGASVLGLDDHRAWRFTVLRVRAQDPPPELYFVKVDVTGADTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDHRAWRFTVLRVRAQDPPPELYFVKVDVTGADTI 720
Qy 721 PQDRLTEVTASIIKPQNTYCVRYAVVQKAAHGHVRKAPKSHVSTLTDLQPYMRQFVAHL 780
Db 721 PQDRLTEVTASIIKPQNTYCVRYAVVQKAAHGHVRKAPKSHVSTLTDLQPYMRQFVAHL 780
Qy 781 QETSPRLDAVVIQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYQCGIPQGSILSTL 840
Db 781 QETSPRLDAVVIQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYQCGIPQGSILSTL 840
Qy 841 LCSLCYGDMEKULFAGIRRDGLLLRLVDDPLLVTPHLLTHAKTFLRTLVRGPEYGCVVNL 900
Db 841 LCSLCYGDMEKULFAGIRRDGLLLRLVDDPLLVTPHLLTHAKTFLRTLVRGPEYGCVVNL 900
Qy 901 RKTWNVPFDEDEALGCTAFVQMPAHGLFPMCGILLDTRTLLEVQSDYSSYARTSIRASLT 960
Db 901 RKTWNVPFDEDEALGCTAFVQMPAHGLFPMCGILLDTRTLLEVQSDYSSYARTSIRASLT 960
Qy 961 NRGFKAGRNRRKLFGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
Db 961 NRGFKAGRNRRKLFGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
Qy 1021 FHQOVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080
Db 1021 FHQOVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080
Qy 1081 KLTHRVHTVYVPLGLSRLTAQTQLSRKLPGTTLTALEAANAANPALPSDFKTTILD 1132
Db 1081 KLTHRVHTVYVPLGLSRLTAQTQLSRKLPGTTLTALEAANAANPALPSDFKTTILD 1132


```

RESULT 30
ADC47061
ID ADC47061 standard; protein; 1132 AA.
XX
AC ADC47061;
XX
DT 18-DEC-2003 (first entry)
XX
DE Human TERT amino acid sequence #SEQ ID 2.
XX
KW Human; TERT; telomerase; antibody; reverse transcriptase; tumour;
KW autoimmune disease; liver cancer.
XX
OS Homo sapiens.
XX
PN W02003054545-A1.
XX
PD 03-JUL-2003.
XX
PF 19-DEC-2002; 2002WO-JP013310.
XX
PR 21-DEC-2001; 2001JP-00390050.
XX
PA (MITS-) MITSUBISHI KAGAKU MEDICAL INC.
PA (MURA/) MURAKAMI S.
PA (KANE/) KANEKO S.
XX
PI Murakami S, Kaneko S, Masutomi K;
XX
DR WPI; 2003-569289/53.
DR N-PSDB; ADC47060.
XX
PT Detecting anti-telomerase antibody for detecting tumors and autoimmune
PT disease.
XX
PS Example Examples; Page 36-41; 45pp; Japanese.
XX
CC The invention relates to a method for detecting an anti-telomerase
CC antibody. The method of the invention comprises reacting telomerase
CC producing protein and a fragment or complex of template RNA with anti-
CC telomerase antibody in a sample, and analysing the product. The
CC telomerase producing protein is preferably telomerase reverse
CC transcriptase, and the analysis method is preferably western blot. The
CC method can be used to detect for tumours and autoimmune disease. The
CC method can also be used for detecting liver cancer. The current sequence
CC represents the human TERT amino acid sequence.
XX
SQ Sequence 1132 AA;

Query Match 99.9%; Score 5954; DB 7; Length 1132;
Best Local Similarity 99.9%; Pred. No 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MPAPRCRAVRSLLRSHYREVLPATFVRRLLGPGQWRLVQRGDPAAFRALVAQCLVCVPW 60
Db 1 MPAPRCRAVRSLLRSHYREVLPATFVRRLLGPGQWRLVQRGDPAAFRALVAQCLVCVPW 60

QY 61 DARPPPAASFQVSCIKELVARVLQRLCERGNKLVATFGFALLDGAAGGPPPEAFTTSVR 120
Db 61 DARPPPAASFQVSCIKELVARVLQRLCERGNKLVATFGFALLDGAAGGPPPEAFTTSVR 120

QY 121 SYLPTNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYOVCGPPLYQLGA 180
Db 121 SYLPTNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYOVCGPPLYQLGA 180

QY 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGLPAPGARRRGSGASRSLPKRPRR 240
Db 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGLPAPGARRRGSGASRSLPKRPRR 240

QY 241 GAAPEPERTVPGGSAHSGRTGSDRGFCVVSPPARPAEATSLEGALSCTRHSHPVSG 300
Db 241 GAAPEPERTVPGGSAHSGRTGSDRGFCVVSPPARPAEATSLEGALSCTRHSHPVSG 300

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QY 301 ROHAGPPSTSRPPRWDTPCPVVAETKHFLYSSGDKQELRPSFLLSLRPSLTGARRL 360
Db 301 ROHAGPPSTSRPPRWDTPCPVVAETKHFLYSSGDKQELRPSFLLSLRPSLTGARRL 360

QY 361 VETIFLGSPPMPGTPRRLPRLPQRYWQMRPLFLELLGNHACQPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSPPMPGTPRRLPRLPQRYWQMRPLFLELLGNHACQPYGVLLKTHCPLRAAVT 420

QY 421 PAAGVCAREKPOGSAVAPEEEDTPRRLLVQLLRQHSSPMQVYGFVRACLRRLRVPGLWGS 480
Db 421 PAAGVCAREKPOGSAVAPEEEDTPRRLLVQLLRQHSSPMQVYGFVRACLRRLRVPGLWGS 480

QY 481 RHNERRFNRNTKKFISLGHAKLSLOELTWKMSVRDCAWLRSPGVCVPAAEHRLRESI 540
Db 481 RHNERRFNRNTKKFISLGHAKLSLOELTWKMSVRDCAWLRSPGVCVPAAEHRLRESI 540

QY 541 LAKFLHLMSSVYVVELLSRFFVVTETTFQKNRLFYRKSVMSKLSQSIGIRQHLKRVQRE 600
Db 541 LAKFLHLMSSVYVVELLSRFFVVTETTFQKNRLFYRKSVMSKLSQSIGIRQHLKRVQRE 600

QY 601 LSEAEVROHREARPAALLTSRLRFPKPDGLRPIVNDYVVGARTFRREKRAERLTSRVKA 660
Db 601 LSEAEVROHREARPAALLTSRLRFPKPDGLRPIVNDYVVGARTFRREKRAERLTSRVKA 660

QY 661 LFSVLNYERAREPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNYERAREPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720

QY 721 PODRLTEVIASIIKPQNTYCVRRYAVQKAAHGHVYKAFKSHVSTLTDLQPMRFVAHL 780
Db 721 PODRLTEVIASIIKPQNTYCVRRYAVQKAAHGHVYKAFKSHVSTLTDLQPMRFVAHL 780

QY 781 QETSPLRDAVTEQSSSLNEASSGLFDVFLRPMCHHAVRIRKSVYVQCGIPQGSILSTL 840
Db 781 QETSPLRDAVTEQSSSLNEASSGLFDVFLRPMCHHAVRIRKSVYVQCGIPQGSILSTL 840

QY 841 LCSLCVGMENKLFAGIRRDGLLLVDVDFLLVTPHLLTHAKTFLRTLVRGVEYCVVNL 900
Db 841 LCSLCVGMENKLFAGIRRDGLLLVDVDFLLVTPHLLTHAKTFLRTLVRGVEYCVVNL 900

QY 901 RKTVVNFVEDEALGGTAFVQMPAHGLFPWCGLLDDTRTLEVSQDSYSSYARTSIRASLTF 960
Db 901 RKTVVNFVEDEALGGTAFVQMPAHGLFPWCGLLDDTRTLEVSQDSYSSYARTSIRASLTF 960

QY 961 NRGFKAGNMRRKLFGLVRLKCHSLFDLQVNSLQTVCTNIYKILLQAYRPHACVQLP 1020
Db 961 NRGFKAGNMRRKLFGLVRLKCHSLFDLQVNSLQTVCTNIYKILLQAYRPHACVQLP 1020

QY 1021 FHQQVWKNTFFLRVISTASLCYSILKAKNAGMSLGAKGAGPLPSEAVOWLCHOAFLL 1080
Db 1021 FHQQVWKNTFFLRVISTASLCYSILKAKNAGMSLGAKGAGPLPSEAVOWLCHOAFLL 1080

QY 1081 KLTRHRVTYVPLGLSLRTAQTLQSRKLPFGTTLTALAAAANPALPSDFKTILD 1132
Db 1081 KLTRHRVTYVPLGLSLRTAQTLQSRKLPFGTTLTALAAAANPALPSDFKTILD 1132

RESULT 31
ADE40482
ID ADE40482 standard; protein; 1132 AA.
XX
AC ADE40482;
XX
DT 29-JAN-2004 (first entry)
XX
DE Human telomerase reverse transcriptase (hTERT).
XX
KW Immortal porcine cell; telomerase reverse transcriptase; epithelial cell;
KW uterine endometrial glandular tissue; virus quantification;
KW virus production; porcine reproductive and respiratory syndrome virus;
KW PRRSV; toxicity evaluation; human; hTERT; enzyme.
XX

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OS Homo sapiens.
PN WO2003077853-A2.
XX
PD 25-SEP-2003.
XX
XX 11-MAR-2003; 2003WO-US007526.
PF
XX 11-MAR-2002; 2002US-0363129P.
XX
XX (MINU) UNIV MINNESOTA.
PA
XX
PI Farris JA, Foster DN, O'grady SM;
DR
DR WPI; 2003-779075/73.
DR N-PSDB; ADE40481.
XX
PT New immortal porcine cell comprising a polynucleotide encoding an
PT exogenous telomerase reverse transcriptase polypeptide, useful for
PT measuring the amount of virus in a sample or for evaluating toxicity of a
PT compound.
PS
PS Claim 4; SEQ ID NO 2; 42pp; English.
XX
XX The invention relates to immortal porcine cells comprising a
CC polynucleotide encoding an exogenous telomerase reverse transcriptase
CC (TERT). The invention also encompasses the method of making immortal
CC porcine cells, and the use of the immortal porcine cells for measuring
CC the amount of virus in a sample, producing a virus, and evaluating the
CC toxicity of a compound. The cells of the invention may be diploid or
CC aneuploid, and may be an epithelial cell obtained from uterine
CC endometrial glandular tissue. The exogenous telomerase reverse
CC transcriptase expressed by the cells of the invention is preferably human
CC telomerase reverse transcriptase (ADE40482). The immortal porcine cells
CC are useful for measuring an amount of a virus in a sample, producing a
CC virus (especially porcine reproductive and respiratory syndrome virus
CC (PRRSV)), or for evaluating toxicity of a compound. The present sequence
CC represents human telomerase reverse transcriptase (hTERT), which is
CC claimed for use in the immortal cells of the invention.
XX
SQ Sequence 1132 AA;

Query Match 99.9%; Score 5954; DB 7; Length 1132;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MPAPRCRAVRSLLRSHYREVLPATFVRLGQWRLVQRGDPAAFRALVAQCLVCVPW 60
Db
QY 61 DARPPPAAPSFQVSCIKELVARVLQRLCERGAKNVLAFGFALLDGARGGPPAFTTSVR 120
Db
QY 121 SYLPTNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db
QY 181 ATQARPPPHASGPRRLGCRANVHVSREAGVPLGLPAPGARRRGGSASRSLPLPRPR 240
Db
QY 181 ATQARPPPHASGPRRLGCRANVHVSREAGVPLGLPAPGARRRGGSASRSLPLPRPR 240
QY 241 GAAPPEPRTVPVGGSWAHPCRTGSDRGFCVVSPPARPAEATSLGALSGLTGRHSHPSVG 300
Db
QY 241 GAAPPEPRTVPVGGSWAHPCRTGSDRGFCVVSPPARPAEATSLGALSGLTGRHSHPSVG 300
QY 301 ROHHAGPPSTSRPPRPWDTPCPVYAEKTHFLYSSGDKQELRPSFLLSSLRPSLTGARRL 360
Db
QY 301 ROHHAGPPSTSRPPRPWDTPCPVYAEKTHFLYSSGDKQELRPSFLLSSLRPSLTGARRL 360
QY 361 VETIFLGSRPWMPGTTPRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
Db
QY 361 VETIFLGSRPWMPGTTPRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420

QY 421 PAAGVCAREKPOGSGVAAPBEEDTDPRLLVOLLRHSSPMQVYGFVRACTLRRLVPPGLWGS 480
Db
QY 481 RHNERPLRNTKKFI SLGKHAKLSLOELTWKMSVRDCAMLRSPGVCVGPAAEHLRREEI 540
Db
QY 541 LAKFLHLMSSVYVVELLRSPFYVTTTFOKNRLFYRKSVWSKLQSIGIRHQLKRVOLRE 600
Db
QY 601 LSEAEVRQREARPAALLTSRLRPIPKPDGLRPVNMNDYVVGARTFRREKAEARLTSRVKA 660
Db
QY 661 LFSVLNRYERARRPGLLGASVGLGDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
Db
QY 721 PQDRLTEVIASIIKPONTYCVRYAVVOKAAHGHVKAFKSHVSTLTDLQPYMRQFVAHL 780
Db
QY 781 QETSPLRDAVVIQSSSLNEASSGLFDFVLFPMCHHAVIRIGKSYVQCQIPQGSILSTL 840
Db
QY 841 LCSLCYGDMEKLFAGIRDDGLLLRLVDDFLLVTPHLLTHAKTFLRTLVRGVPEYGCVVNL 900
Db
QY 901 RKTVMNFPVEDEALGCTAFVQWPAHGLFPWCGLLDTRTLEVSQSDYSSYARTSIRASLT 960
Db
QY 961 NRGFKAGRNNRRLFGVLRKCHSLFLDLQVNSLQVCTNIYKILLQLQAYRFHACVQLP 1020
Db
QY 1021 FHQVWKNPTFFLRLVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
Db
QY 1081 KLTRHRVTYVPLIGSLRTAQTQLSRKLPGTTLTALEAANPALPSDFKTILD 1132
Db
QY 1081 KLTRHRVTYVPLIGSLRTAQTQLSRKLPGTTLTALEAANPALPSDFKTILD 1132
RESULT 32
AAW56113
ID AAW56113 standard; protein; 1132 AA.
XX
AC AAW56113;
XX
DT 13-AUG-1998 (first entry)
XX
DE Human telomerase reverse transcriptase protein refined sequence.
XX
KW Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
XX
OS Homo sapiens.
XX
PN GB2317891-A.
XX
PD 08-APR-1998.
XX
PF 01-OCT-1997; 97GB-00020890.
XX
PR 01-OCT-1996; 96US-00724643.
PR 18-APR-1997; 97US-00844419.

PR 25-APR-1997; 97US-00846017.
 PR 06-MAY-1997; 97US-00851843.
 PR 09-MAY-1997; 97US-00854050.
 PR 14-AUG-1997; 97US-00911312.
 PR 14-AUG-1997; 97US-00912551.
 PR 14-AUG-1997; 97US-00915503.
 XX (GERO-) GERON CORP.
 PA (UYTE-) UNIV TECHNOLOGY CORP.
 XX
 PI Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
 PI Andrews WH;
 XX WPI; 1998-171633/16.
 DR N-PSDB; AAV22428.
 DR
 XX
 XX Pure and recombinant human Telomerase Reverse Transcriptase and its
 PT variants - are useful in the diagnosis, prognosis and treatment of cell
 PT proliferation conditions especially cancer and ageing.
 XX
 PS Example 1; Fig 74; 387pp; English.
 PS
 XX The present sequence represents human telomerase reverse transcriptase
 CC (hTERT), which is a ribonucleoprotein. The present invention also
 CC describes the following methods: (A) determining whether a test compound
 CC is a modulator of hTERT, by detecting the change in hTERT recombinant
 CC protein or polynucleotide, on administration of the compound; (B)
 CC preparation of recombinant telomerase by contacting a protein preparation
 CC of hTERT with a telomerase RNA component; (C) detection of the hTERT RNA or
 CC protein in a sample by binding a relevant probe to the sample and
 CC detecting the complex formed or in the case of RNA detection, amplifying
 CC the product and correlating the presence of complex or amplification
 CC product with presence of hTERT in the sample; and (D) increasing the
 CC proliferation of a vertebrate cell by increasing hTERT expression; and (E)
 CC the use of an agent that causes an increase in cell vertebrate cell
 CC proliferation to create a medicament that inhibits ageing. A protein
 CC preparation of hTERT and the polynucleotide encoding hTERT can be used in
 CC the manufacture of medicaments for inhibiting the effect of ageing or
 CC cancer. Inhibitors of telomerase activity can be used to treat conditions
 CC that are associated with high telomerase activity. A protein preparation
 CC of hTERT can also be used in the new methods
 XX
 SQ Sequence 1132 AA;
 Query Match 99.8%; Score 5952; DB 2; Length 1132;
 Best Local Similarity 99.8%; Pred. No. 0;
 Matches 1130; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 QY 1 MPAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAFRALVAQCLVCPW 60
 DB 1 MPAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAFRALVAQCLVCPW 60
 QY 61 DAPPPAAPSFRVSCIKELVARVLRQRCRGAKNVLAFGFALLDGGARGPPEAFTTSVR 120
 DB 61 DAPPPAAPSFRVSCIKELVARVLRQRCRGAKNVLAFGFALLDGGARGPPEAFTTSVR 120
 QY 121 SYLPTNTVTDALRGSGAWGLLRRVGDVLLVHLLARCALFVLVAPSCAYOVCGPPYQLGA 180
 DB 121 SYLPTNTVTDALRGSGAWGLLRRVGDVLLVHLLARCALFVLVAPSCAYOVCGPPYQLGA 180
 QY 181 ATOARPPPHASGPRRLGCRANWHSVREAGVPLGLPAPGARRRGGSASRSLLPKRPRR 240
 DB 181 ATOARPPPHASGPRRLGCRANWHSVREAGVPLGLPAPGARRRGGSASRSLLPKRPRR 240
 QY 241 GAAPEPRTFVCGSWAHGRTGSDRGFCVVSPPARPAEATSLGALSGRTHSHPSVG 300
 DB 241 GAAPEPRTFVCGSWAHGRTGSDRGFCVVSPPARPAEATSLGALSGRTHSHPSVG 300
 QY 301 RQHAGPPSTSPRPDPTCPVVAETHKHYLYSSGDKQLRPSFLLSLSRLTGARRL 360
 DB 301 RQHAGPPSTSPRPDPTCPVVAETHKHYLYSSGDKQLRPSFLLSLSRLTGARRL 360
 QY 361 VETIFLGSRPWPGTPRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420

DB 361 VETIFLGSRPWPGTPRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
 QY 421 PAAGVCAREKPGSGVAAPBEEDTDPRRLVQLLRQHSHPQVYGVVACLRRLRVPGLWGS 480
 DB 421 PAAGVCAREKPGSGVAAPBEEDTDPRRLVQLLRQHSHPQVYGVVACLRRLRVPGLWGS 480
 QY 481 RNEERRFLRNTKKFISLGHAKLSLOELTWKNSVDRDCAWLRSPGVCVPAAEHRLREI 540
 DB 481 RNEERRFLRNTKKFISLGHAKLSLOELTWKNSVDRDCAWLRSPGVCVPAAEHRLREI 540
 QY 541 LAKFLHMLMSVYVVELLSRFFVYVTTTFOKNRLLFFYRKSVMSKLSQSIGIRQHLKRVQLE 600
 DB 541 LAKFLHMLMSVYVVELLSRFFVYVTTTFOKNRLLFFYRKSVMSKLSQSIGIRQHLKRVQLE 600
 QY 601 LSEAEVRQHRARPALLTSRUFIPKPDGLRPIVNMVYVVGARTFRREKASRLTSRVKA 660
 DB 601 LSEAEVRQHRARPALLTSRUFIPKPDGLRPIVNMVYVVGARTFRREKASRLTSRVKA 660
 QY 661 LFSVLNYSRARRPGLLGASVGLDDIHRAWRTFVLVRAODPPPELYFVKVDVTGAYDTI 720
 DB 661 LFSVLNYSRARRPGLLGASVGLDDIHRAWRTFVLVRAODPPPELYFVKVDVTGAYDTI 720
 QY 721 PODRLTEVIASIIKQNTYCVRRYAVVQAAHGHVKAFKSHVSTLTDLQPYMRQFVAHL 780
 DB 721 PODRLTEVIASIIKQNTYCVRRYAVVQAAHGHVKAFKSHVSTLTDLQPYMRQFVAHL 780
 QY 781 QETSPLRDAVIEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSVYVQCGIPQGSILSTL 840
 DB 781 QETSPLRDAVIEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSVYVQCGIPQGSILSTL 840
 QY 841 LCSLCYGMENKLFAGIRDDGLLLVDDFLLVTPHLTHAKTFLRTLVRGPEYGCVVNL 900
 DB 841 LCSLCYGMENKLFAGIRDDGLLLVDDFLLVTPHLTHAKTFLRTLVRGPEYGCVVNL 900
 QY 901 RKTVNVFVEDEALGGTAFVQMPAHGLFPWCGLLDTRTLLEVSQSYSSYARTSIRASLTF 960
 DB 901 RKTVNVFVEDEALGGTAFVQMPAHGLFPWCGLLDTRTLLEVSQSYSSYARTSIRASLTF 960
 QY 961 NRGFKAGNMRRKLFVGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRPHACVLQLP 1020
 DB 961 NRGFKAGNMRRKLFVGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRPHACVLQLP 1020
 QY 1021 FHQQVWKNPTFFLRVISDTASICYSILKAKNAGSLGAKGAGPLPSEAVOMLCHQAFLL 1080
 DB 1021 FHQQVWKNPTFFLRVISDTASICYSILKAKNAGSLGAKGAGPLPSEAVOMLCHQAFLL 1080
 QY 1081 KLTRHRVTYVPLLAGSLRTAQQLSRKLPGLTTLTALAAAANPALPSDFKTILD 1132
 DB 1081 KLTRHRVTYVPLLAGSLRTAQQLSRKLPGLTTLTALAAAANPALPSDFKTILD 1132
 RESULT 33
 ID AAY00647
 XX AAY00647 standard; protein; 1166 AA.
 AC AAY00647;
 XX 26-JUL-1999 (first entry)
 XX Telomerase (ver. 2) protein sequence.
 KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
 KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
 KW smooth muscle cell hyperplasia; stem cell proliferation; Wilms' tumour;
 KW stem cell differentiation; organ regeneration; organ differentiation.
 OS Homo sapiens.
 OS Synthetic.
 XX WO9901560-A1.
 XX 14-JAN-1999.

XX PF 01-JUL-1998; 98WO-US013835.
XX PR 01-JUL-1997; 97US-0051410P.
XX PR 21-JUL-1997; 97US-0053018P.
XX PR 21-JUL-1997; 97US-0053329P.
XX PR 04-AUG-1997; 97US-0054642P.
XX PR 09-SEP-1997; 97US-0058287P.
XX PA (CAMB-) CAMBIA BIOSYSTEMS LLC.
XX PI Killian A, Bowtell D;
XX PI WPI; 1999-106060/09.
XX DR N-PSDB; AAX18275.
XX CC New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX PS Claim 4; Fig 11z-ac; 134pp; English.
XX CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilms
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury
XX SQ Sequence 1166 AA;
Query Match 99.4%; Score 5927; DB 2; Length 1166;
Best Local Similarity 97.0%; Pred. No. 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 34; Gaps 1;
QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVQRGDPAAFRALVAQCLVCVPW 60
DB 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVQRGDPAAFRALVAQCLVCVPW 60
QY 61 DARPPPAAPSFRQV-----SCLKELVARVLQ 86
DB 61 DARPPPAAPSFRQVGLPGVGRGLRAAGNQORHAESSAGDSGRPPRRSCLKELVARVLQ 120
QY 87 RLCERGAKNVLAFGFALLDARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLRRVCD 146
DB 121 RLCERGAKNVLAFGFALLDARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLRRVGD 180
QY 147 DVLVHLLARCALFVLVAPSCAYQVCPPPLYQLGAATOARPPPHASGPRRLGCERAWNHS 206
DB 181 DVLVHLLARCALFVLVAPSCAYQVCPPPLYQLGAATOARPPPHASGPRRLGCERAWNHS 240
QY 207 VREAGVPLGLPAGARRRGGSASRSPLPKRPRRGAAPERTPVQGGSWAHPGRTGRPS 266
DB 241 VREAGVPLGLPAGARRRGGSASRSPLPKRPRRGAAPERTPVQGGSWAHPGRTGRPS 300
QY 267 DRGFCVVSAPRAAEATSLGALSGRTRHSHPSVGRQHHAGPPSTSRPPRWDTPCPPYVA 326
DB 301 DRGFCVVSAPRAAEATSLGALSGRTRHSHPSVGRQHHAGPPSTSRPPRWDTPCPPYVA 360
QY 327 ETKHFLYSSGDKEQLRPSFLLSLRPSLTGARRLVETIFLGRPMWPGTPRRLPLRQRY 386
DB 361 ETKHFLYSSGDKEQLRPSFLLSLRPSLTGARRLVETIFLGRPMWPGTPRRLPLRQRY 420
QY 387 WQMRPLFLELLGNHAQCYPYGLLTKHCPLRAAAVTPAAGVCAREKPGQGSVAAPPEEDTDP 446

DB 421 WQMRPLFLELLGNHAQCYPYGLLTKHCPLRAAAVTPAAGVCAREKPGQGSVAAPPEEDTDP 480
QY 447 RLVQLLRQHSSPWQYVGFVRACLRRLVPPGLWGSRHNRERFLRNTKKFISLKGAKLSIQ 506
DB 481 RLVQLLRQHSSPWQYVGFVRACLRRLVPPGLWGSRHNRERFLRNTKKFISLKGAKLSIQ 540
QY 507 ELTWKMSVRDCAWLRRSPGVCVPAABHRLREIILAKFLHMLMSVYVVELLSRFFVYVTT 566
DB 541 ELTWKMSVRGCWLRRSPGVCVPAABHRLREIILAKFLHMLMSVYVVELLSRFFVYVTT 600
QY 567 TFQKNRLFFYRKSVMSKLSQIGIROHLKRVQLRELSEAEVROHREARPAALLTSRLRFIPK 626
DB 601 TFQKNRLFFYRKSVMSKLSQIGIROHLKRVQLRELSEAEVROHREARPAALLTSRLRFIPK 660
QY 627 PDGLRPIVNMDDYVGARTFRREKRAERLTSRVKALFVSLNLYERARRPGLLGASVLGLDDI 686
DB 661 PDGLRPIVNMDDYVGARTFRREKRAERLTSRVKALFVSLNLYERARRPGLLGASVLGLDDI 720
QY 687 HRAWRTFVLRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKPQNTYCVRRYAV 746
DB 721 HRAWRTFVLRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKPQNTYCVRRYAV 780
QY 747 VQKAAGHVRKAFKSHVSTLTLDQPYMRQFVAHLQETSPLRDAVVEQSSSLNEASSGLF 806
DB 781 VQKAAGHVRKAFKSHVSTLTLDQPYMRQFVAHLQETSPLRDAVVEQSSSLNEASSGLF 840
QY 807 DVFLRFMCHHAVIRIGKSVQCGIPQGSILSTLLCSLCYGDMEKLPAGIRRDGLLLRL 866
DB 841 DVFLRFMCHHAVIRIGKSVQCGIPQGSILSTLLCSLCYGDMEKLPAGIRRDGLLLRL 900
QY 867 VDDFLVTPHLTHAKTFLRTLVRGVEYGCVVNLRTVNVNPFVEDEALGGTAFVQMPAHG 926
DB 901 VDDFLVTPHLTHAKTFLRTLVRGVEYGCVVNLRTVNVNPFVEDEALGGTAFVQMPAHG 960
QY 927 LFPWCGLLDTRTLEVSQSDYSSYARTSIRASITFNRGFKAGNMRRKLFGLVRLKCHSLF 986
DB 961 LFPWCGLLDTRTLEVSQSDYSSYARTSIRASITFNRGFKAGNMRRKLFGLVRLKCHSLF 1020
QY 987 LDQVNSLQTVCTNIYKILLQAYRPHACVLQLPFHQQVWKNPFPFLRVISDTASLCYSI 1046
DB 1021 LDQVNSLQTVCTNIYKILLQAYRPHACVLQLPFHQQVWKNPFPFLRVISDTASLCYSI 1080
QY 1047 LKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAPLLKLTRHRVTYVPLLSLRTAQTQLSRK 1106
DB 1081 LKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAPLLKLTRHRVTYVPLLSLRTAQTQLSRK 1140
QY 1107 LFGTTLTALAANAANPALPSDFKTILD 1132
DB 1141 LFGTTLTALAANAANPALPSDFKTILD 1166
RESULT 34
AAW56101
ID AAW56101 standard; protein; 1405 AA.
XX AC AAW56101;
XX AC AAW56101;
DT 13-AUG-1998 (first entry)
XX DE Enhanced green fluorescent protein and hTERT fusion protein.
XX DE Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
XX OS Synthetic.
OS Homo sapiens.
XX Key Location/Qualifiers
FT 1..250
FT /note= "enhanced green fluorescent protein fragment"
FT 276..1405
FT /note= "hTERT protein fragment"
XX

PN GB2317891-A.
XX 08-APR-1998.
XX 01-OCT-1997; 97GB-00020890.
XX 01-OCT-1996; 96US-00724643.
PR 18-APR-1997; 97US-00844419.
PR 25-APR-1997; 97US-00846017.
PR 06-MAY-1997; 97US-00851843.
PR 09-MAY-1997; 97US-00854050.
PR 14-AUG-1997; 97US-00911312.
PR 14-AUG-1997; 97US-00912951.
PR 14-AUG-1997; 97US-00915503.
XX
(GERO-) GERON CORP.
PA (UYTE-) UNIV TECHNOLOGY CORP.
XX
XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
PI Andrews WH;
PI WPI; 1998-171633/16.
XX
XX Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.
XX
XX Example 15; Page 269-270; 387pp; English.
XX
XX The present sequence represents a fusion protein from an example of the
CC present invention which describes human telomerase reverse transcriptase
CC (hTERT). The present invention also describes the following methods: (A)
CC determining whether a test compound is a modulator of hTERT, by detecting
CC the change in hTERT recombinant protein or polynucleotide, on
CC administration of the compound; (B) preparation of recombinant telomerase
CC by contacting a protein preparation of hTERT with a telomerase RNA
CC component; (C) detection of the hTERT RNA or protein in a sample by
CC binding a relevant probe to the sample and detecting the complex formed
CC or in the case of RNA detection, amplifying the product and correlating
CC the presence of complex or amplification product with presence of hTERT in
CC the sample; and (D) increasing the proliferation of a vertebrate cell by
CC increasing hTERT expression; and (E) the use of an agent that causes an
CC increase in cell vertebrate cell proliferation to create a medicament
CC that inhibits ageing. A protein preparation of hTERT and the
CC polynucleotide encoding hTERT can be used in the manufacture of
CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
CC telomerase activity can be used to treat conditions that are associated
CC with high telomerase activity. A protein preparation of hTERT can also be
CC used in the new methods
XX
SQ Sequence 1405 AA;

Query Match 99.3%; Score 5918; DB 2; Length 1405;
Best Local Similarity 99.6%; Pred. No. 0;
Matches 1128; Conservative 1; Mismatches 1; Indels 2; Gaps 2;

QY 1 MPAPRCRAVRSLLSHYREVLPATFVRRLLGPQGRWLVQRGDPAAFRALVAQCLVCPW 60
DB 276 MPAPRCRAVRSLLSHYREVLPATFVRRLLGPQGRWLVQRGDPAAFRALVAQCLVCPW 335
QY 61 DARPPPAAPSPROVSCLELVARVLQRLCERGAKNVLAFFGALLDGGAGGPEAFTTSVR 120
DB 336 DARPPPAAPSPROVSCLELVARVLQRLCERGAKNVLAFFGALLDGGAGGPEAFTTSVR 395
QY 121 SYLPTNTVDALRGSGAWGLLRRVDDVLLHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
DB 396 SYLPTNTVDALRGSGAWGLLRRVDDVLLHLLARCALFVLVAPSCAYQVCGPPLYQLGA 455
QY 181 ATOARPPPHASGPRRLCERAWNHSVREAGVPLGLPAGARRGGASRSLLPLPKPRR 240
DB 456 ATOARPPPHASGPRRLCERAWNHSVREAGVPLGLPAGARRGGASRSLLPLPKPRR 515
QY 241 GAAPEPRTPVQGSWAHPGRTGRGSDRGFCVWSPARPAEBATSLEGALSOTRHSHPVSG 300

DB 516 GAAPEPRTPVQGSWAHPGRTGRGSDRGFCVWSPARPAEBATSLEGALSOTRHSHPVSG 575
QY 301 RQHAGAPPSTSRPPRMDTPCPVVAETKHFLYSSGDKQLRPSFLLSLSPSLTGARRL 360
DB 576 RQHAGAPPSTSRPPRMDTPCPVVAETK-FLYSSGDKQLRPSFLLSLSPSLTGARRL 634
QY 361 VETIFLGSRPWPGTTPRLPLPQRYWQMRPLFLELLGNHQAQCPYGVLLKTHCPRAAVT 420
DB 635 VETIFLGSRPWPGTTPRLPLPQRYWQMRPLFLELLGNHQAQCPYGVLLKTHCPRAAVT 694
QY 421 PAAGVCAREKPGQGSVAAPDEEDTPRRLVQLLRHSSPWQYGVFVACLRRLVPPGLWGS 480
DB 695 PAAGVCAREKPGQGSVAAPDEEDTPRRLVQLLRHSSPWQYGVFVACLRRLVPPGLWGS 754
QY 481 RHNERRFLRNTKTFISLGKHAKLSLQELTWKQSVYRDCAWLRSSPGVGCVAEHLRREEI 540
DB 755 RHNERRFLRNTKTFISLGKHAKLSLQELTWKQSVYRDCAWLRSSPGVGCVAEHLRREEI 814
QY 541 LAKFLHLMWSVYVVELLRSFFVTTTFOKNRLFYKSVMSKLOSIGIROHLKRVQURE 600
DB 815 LAKFLHLMWSVYVVELLRSFFVTTTFOKNRLFYKSVMSKLOSIGIROHLKRVQURE 874
QY 601 LSEAEVRQHREARPAALLTSRLRFIPKPDGLRPIVNM DYVVGARTFRREKRAERLTSRVA 660
DB 875 LSEAEVRQHREARPAALLTSRLRFIPKPDGLRPIVNM DYVVGARTFRREKRAERLTSRVA 934
QY 661 LFSVLNTERARRPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
DB 935 LFSVLNTERARRPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 994
QY 721 PODRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLOPYMRQFVAHL 780
DB 995 PODRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLOPYMRQFVAHL 1054
QY 781 QETSPLRDVAVIEOSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQIPQGSILSTL 840
DB 1055 QETSPLRDVAVIEOSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQIPQGSILSTL 1114
QY 841 LCSLCYGDMEKMLFAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRVLVRGVPYGCVVNL 900
DB 1115 LCSLCYGDMEKMLFAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRVLVRGVPYGCVVNL 1174
QY 901 RKTWNPFVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVDQSDYSSYARTSTRASLTF 960
DB 1175 RKTWNPFVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVDQSDYSSYARTSTRASVTF 1234
QY 961 NRGFKAGRNMRRLFGVLRLLKCHSLFLLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
DB 1235 NRGFKAGRNMRRLFGVLRLLKCHSLFLLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1294
QY 1021 FHOQVWKNPTFFELRVISDTASLCYSTILKAKNAGMSLGAKGAAGPLPSEAVOWLCHQAFLL 1080
DB 1295 FHOQVWKNPTFFELRVISDTASLCYSTILKAKNAGMSLGAKGAAGPLPSEAVOWLCHQAFLL 1354
QY 1081 KLTRHRVTVYVPLLGSL-TAQTLQSRKLPGTTLTALEAANPALPSPDKTILD 1132
DB 1355 KLTRHRVTVYVPLLGSL-TAQTLQSRKLPGTTLTALEAANPALPSPDKTILD 1405
RESULT 35
AAW47007
ID AAW47007 standard; protein; 1199 AA.
XX
AC AAW47007;
XX
DT 13-AUG-1998 (first entry)
XX
DE Glutathione-S-transferase and hTERT fusion protein 7.
XX
XX Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
XX

DT	26-JUL-1999	(first entry)	
DE	Telomerase protein sequence lacking motif A.		
XX			
KW	Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;		
KW	neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;		
KW	smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;		
KW	stem cell differentiation; organ regeneration; organ differentiation.		
OS	Homo sapiens.		
OS	Synthetic.		
PN	WO9901560-A1.		
XX			
PD	14-JAN-1999.		
XX			
PF	01-JUL-1998;	98WO-US013835.	
XX			
PR	01-JUL-1997;	97US-0051410P.	
PR	21-JUL-1997;	97US-0053018P.	
PR	21-JUL-1997;	97US-0053329P.	
PR	04-AUG-1997;	97US-0054642P.	
PR	09-SEP-1997;	97US-0058287P.	
XX			
PA	(CAMB-) CAMBIA BIOSYSTEMS LLC.		
XX			
PI	Killian A, Bowtell D;		
XX			
DR	WPI; 1999-106060/09.		
DR	N-PSDB; AAX18269.		
XX			
PT	New isolated vertebrate telomerase genes - used to develop products for		
PT	treating cancers or for organ regeneration, nerve cell or brain cell		
PT	growth following injury or bone marrow transplantation.		
XX			
PS	Claim 4; Fig 11n-o; 134pp; English.		
XX			
CC	This sequence is a truncated human telomerase of the invention. Primers		
CC	that amplify the telomerase coding sequence can be used in a method for		
CC	diagnosing cancer in a patient. The telomerase can be used for detection,		
CC	diagnosis and drug screening. Inhibitors of telomerase activity can be		
CC	used to treat cancers such as melanomas, other skin cancers,		
CC	neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,		
CC	lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin		
CC	growths. Enhancers of telomerase may be used to stimulate stem cell		
CC	proliferation and differentiation (expansion of haematopoietic stem cells		
CC	could be administered in the bone marrow transplant context). As well,		
CC	many tissues have stem cells. Proliferation of these cells may be useful		
CC	in wound healing, hair growth, treatment of disease such as Wilm's		
CC	tumour, organ regeneration or differentiation after injury or diseases,		
CC	nerve cell or brain cell growth following injury		
XX			
SQ	Sequence 1120 AA;		
Query Match			
Best Local Similarity 98.7%; Score 5882; DB 2; Length 1120;			
Matches 1120; Conservative 0; Mismatches 0; Indels 12; Gaps 1;			
QY	1	MPRAPRCRAVRSLRSHYREVLP	PLATFVRRLGPQGWRLVQRGDPAAFRALVAQCILVCPW 60
DB	1	MPRAPRCRAVRSLRSHYREVLP	PLATFVRRLGPQGWRLVQRGDPAAFRALVAQCILVCPW 60
QY	61	DARPPAPAPSPQVSCLELVARVQL	QRCERGAKNVLAFGFALLDARGGPPFAFTTSVR 120
DB	61	DARPPAPAPSPQVSCLELVARVQL	QRCERGAKNVLAFGFALLDARGGPPFAFTTSVR 120
QY	121	SVLPNTVTDALRGSGAWGLLRVGD	DLVHLARCALFVLVAPSCAYQVCGPLYQLGA 180
DB	121	SVLPNTVTDALRGSGAWGLLRVGD	DLVHLARCALFVLVAPSCAYQVCGPLYQLGA 180
QY	181	ATQARPPPHASGPRRLRCERAWNHS	VREAGVPLGLPAPGARRRGGSASRSLPLPKPRR 240
DB	181	ATQARPPPHASGPRRLRCERAWNHS	VREAGVPLGLPAPGARRRGGSASRSLPLPKPRR 240

QY	241	GAAPBPTPVGGSWAHPGRTRG	PSDRGFCVVSFAPPAEATSLEGALSGTRHSHPSVG 300
DB	241	GAAPBPTPVGGSWAHPGRTRG	PSDRGFCVVSFAPPAEATSLEGALSGTRHSHPSVG 300
QY	301	ROHAGPSTSPRPSPWDTPCPV	VAETKHFLYSSGDKQLRPSFLLSLRSLTGARRL 360
DB	301	ROHAGPSTSPRPSPWDTPCPV	VAETKHFLYSSGDKQLRPSFLLSLRSLTGARRL 360
QY	361	VETIFLGRSPWMPGTFRRLP	RLPQRYWQMRPLFLELLGNHACQPYGVLLKTHCPRAAVT 420
DB	361	VETIFLGRSPWMPGTFRRLP	RLPQRYWQMRPLFLELLGNHACQPYGVLLKTHCPRAAVT 420
QY	421	PAAGVCAREKPGQSVAAPEE	DDTPRRLVQLLRQHSSPWQYGVFRACLRRLVPPGLMGS 480
DB	421	PAAGVCAREKPGQSVAAPEE	DDTPRRLVQLLRQHSSPWQYGVFRACLRRLVPPGLMGS 480
QY	481	RHNERFLRNTKFKISLGHAK	LSLOELTWKMSVRDCAWLRSSPGVGCVPAAEHLRREI 540
DB	481	RHNERFLRNTKFKISLGHAK	LSLOELTWKMSVRDCAWLRSSPGVGCVPAAEHLRREI 540
QY	541	LAKFLHLMWSVYVVELLSR	FFYVTTTTFQKNRLFYRKSVMSKLSQSIGIRHKLKRVQURE 600
DB	541	LAKFLHLMWSVYVVELLSR	FFYVTTTTFQKNRLFYRKSVMSKLSQSIGIRHKLKRVQURE 600
QY	601	LSEAEVROHREARPAALLT	SRLPFKPDGLRPIVNM DYVVGARTFRREKRAERLTSRVKA 660
DB	601	LSEAEVROHREARPAALLT	SRLPFKPDGLRPIVNM DYVVGARTFRREKRAERLTSRVKA 660
QY	661	LFSVLNVERARRPGLLGAS	VLGLDDIHRWRTFVLVRQAQDPPPELYPVKVDVTGAYDTI 720
DB	661	LFSVLNVERARRPGLLGAS	VLGLDDIHRWRTFVLVRQAQDPPPELYPVKVDVTGAYDTI 720
QY	721	PDRLTEVIASIIKPQNTY	CVRRYAVVQKAAGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
DB	711	--DRLTEVIASIIKPQNTY	CVRRYAVVQKAAGHVRKAFKSHVSTLTDLPYMRQFVAHL 768
QY	781	QETSLPLDADVIEOSSINE	ASSGLFQVFLRFMCHHAVIRCKSYVOCQIPQGSILSTL 840
DB	769	QETSLPLDADVIEOSSINE	ASSGLFQVFLRFMCHHAVIRCKSYVOCQIPQGSILSTL 828
QY	841	LCSLCYGDMENKLPAGIR	RRDGLLRVDDFLLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900
DB	829	LCSLCYGDMENKLPAGIR	RRDGLLRVDDFLLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 888
QY	901	RKTVNFVEDEALGGTA	FVQMPAHGLFPWCGLLLDTRTLEVSQSDYSSYARTSIRASLTF 960
DB	889	RKTVNFVEDEALGGTA	FVQMPAHGLFPWCGLLLDTRTLEVSQSDYSSYARTSIRASLTF 948
QY	961	NRGFKAGRNMRRLFGVLR	LKCHSLFLDLQVNSIQTVCTNIYKILLQAYRFHACVLQLP 1020
DB	949	NRGFKAGRNMRRLFGVLR	LKCHSLFLDLQVNSIQTVCTNIYKILLQAYRFHACVLQLP 1008
QY	1021	FHQQVKNPTFFLRVISD	TASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080
DB	1009	FHQQVKNPTFFLRVISD	TASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1068
QY	1081	KLTRHRVTVYVPLLSG	LTAQTOLSRKLPCTTLTALEAAANPALPSDFKTILD 1132
DB	1069	KLTRHRVTVYVPLLSG	LTAQTOLSRKLPCTTLTALEAAANPALPSDFKTILD 1120
RESULT 37			
AAY00650			
ID	AAY00650 standard; protein; 1120 AA.		
XX			
AC	AAY00650;		
XX			
DT	26-JUL-1999 (first entry)		
XX			
DE	Telomerase (ver. 2) protein sequence lacking motif A.		
XX	Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;		

KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.

XX Homo sapiens.
OS Synthetic.

PN WO9901560-A1.

XX 14-JAN-1999.

XX 01-JUL-1998; 98WO-US013835.

PR 01-JUL-1997; 97US-0051410P.

PR 21-JUL-1997; 97US-0053018P.

PR 21-JUL-1997; 97US-0053329P.

PR 04-AUG-1997; 97US-0054642P.

PR 03-SEP-1997; 97US-0058287P.

XX (CAMB-) CAMBIA BIOSYSTEMS LLC.

PI Kilian A, Bowtell D;

XX WPI; 1999-106060/09.

DR N-PSDB; AAX18278.

XX New isolated vertebrate telomerase genes - used to develop products for

PT treating cancers or for organ regeneration, nerve cell or brain cell

PT growth following injury or bone marrow transplantation.

XX Claim 4; Fig 11ah-aj; 134pp; English.

XX This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The N-terminus of
CC this sequence can be replaced by the sequences shown in AAY00656-Y00658

XX SQ Sequence 1120 AA;

Query Match 98.5%; Score 5873; DB 2; Length 1120;
Best Local Similarity 98.9%; Pred. No. 0;
Matches 1119; Conservative 0; Mismatches 1; Indels 12; Gaps 1;

QY 1 MPRAPCRVRSLRSHYREVLPLATFVRRLVQPGWRLVQGDPAAPRALVAQCLVCVPW 60

Db 1 MPRAPCRVRSLRSHYREVLPLATFVRRLVQPGWRLVQGDPAAPRALVAQCLVCVPW 60

QY 61 DARPPPAAPSPROVSCLELVARVLQRLCERGAKNVLAFGALLDARGGPPPAFTTSVR 120

Db 61 DARPPPAAPSPROVSCLELVARVLQRLCERGAKNVLAFGALLDARGGPPPAFTTSVR 120

QY 121 SYLPNTVTDALRSGGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180

Db 121 SYLPNTVTDALRSGGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180

QY 181 ATQARPPPHASGPRRLRCERANHNSVREAGVPLGLPAGCARRRGGSGASRLPLKPRR 240

Db 181 ATQARPPPHASGPRRLRCERANHNSVREAGVPLGLPAGCARRRGGSGASRLPLKPRR 240

QY 241 GAAPPEPTPVGGGWAHPGRTGSDRGFCVVSPPAPBEATSLGALSGTRHSHPSVG 300

Db 241 GAAPPEPTPVGGGWAHPGRTGSDRGFCVVSPPAPBEATSLGALSGTRHSHPSVG 300

QY 301 RQHHAGPPSTSRPPRPWDTPCPVYAETKHFLYSSGDKQELRPSFLSSLRPSLTGARRL 360
Db 301 RQHHAGPPSTSRPPRPWDTPCPVYAETKHFLYSSGDKQELRPSFLSSLRPSLTGARRL 360
QY 361 VETIFLGSRPWMPGTPRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPWMPGTPRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
QY 421 PAAGVCAREKPOGSVAAPREEDTPRLVOLLROHSSPMQVYGFVRACLRRLVPPGLWGS 480
Db 421 PAAGVCAREKPOGSVAAPREEDTPRLVOLLROHSSPMQVYGFVRACLRRLVPPGLWGS 480
QY 481 RHNERRFLRNTKKFISLGHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Db 481 RHNERRFLRNTKKFISLGHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
QY 541 LAKFLHMLSVVYVELLRSPFYVTETTFQKNRLLFFYRKSVWSKLQSIGIRQHVKVQLRE 600
Db 541 LAKFLHMLSVVYVELLRSPFYVTETTFQKNRLLFFYRKSVWSKLQSIGIRQHVKVQLRE 600
QY 601 LSEAEVRQHREARPAALLTSRLRPIPKDGLRPIVNMVYVVGARTFRREKRAERLTSRVKA 660
Db 601 LSEAEVRQHREARPAALLTSRLRPIPKDGLRPIVNMVYVVGARTFRREKRAERLTSRVKA 660
QY 661 LFSVLNYERARRPGLLGASVGLGDDIHRARWTFVLVRVRAQDPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNYERARRPGLLGASVGLGDDIHRARWTFVLVRVRAQDPPPELYFVKVDVTGAYDTI 720
QY 721 PDRLTEVIASIIKPONTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
Db 721 PDRLTEVIASIIKPONTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
QY 781 QETSPURDAVTEQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSYVQCQIPGSGILSTL 840
Db 781 QETSPURDAVTEQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSYVQCQIPGSGILSTL 840
QY 841 LCSLCYGDMEKMLFAGIRRDGLLRLVDDFLLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
Db 841 LCSLCYGDMEKMLFAGIRRDGLLRLVDDFLLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
QY 901 RKTVMNPFVEDEALGDTAFVQMPAHGLFPWCGLLTLTRILEVQSDYSSVARTSIRASLTF 960
Db 901 RKTVMNPFVEDEALGDTAFVQMPAHGLFPWCGLLTLTRILEVQSDYSSVARTSIRASLTF 960
QY 961 NRGFKAGRNWRRLFGVLRKCHSLFLDLQVNSLQVCTNIYKILLQAYRPHACVLQLP 1020
Db 961 NRGFKAGRNWRRLFGVLRKCHSLFLDLQVNSLQVCTNIYKILLQAYRPHACVLQLP 1020
QY 949 NRGFKAGRNWRRLFGVLRKCHSLFLDLQVNSLQVCTNIYKILLQAYRPHACVLQLP 1008
Db 949 NRGFKAGRNWRRLFGVLRKCHSLFLDLQVNSLQVCTNIYKILLQAYRPHACVLQLP 1008
QY 1021 FHQQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
Db 1021 FHQQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
QY 1009 FHQQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1068
Db 1009 FHQQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1068
QY 1081 KLTRHRVTYVPLIGSLRTAQTLRSKLPGTTTLTALEAAANPALPSDFKTLTD 1132
Db 1069 KLTRHRVTYVPLIGSLRTAQTLRSKLPGTTTLTALEAAANPALPSDFKTLTD 1120

RESULT 38

AAW47006

ID AAW47006 standard; protein; 1150 AA.

XX AC AAW47006;

XX DT 13-AUG-1998 (first entry)

XX DE Glutathione-S-transferase and hTERT fusion protein 6.

XX DE Human; telomerase reverse transcriptase; hTERT; TERT; diagnosis; prognosis;

XX KW cell proliferation; cancer; ageing; ribonucleoprotein.

XX OS Synthetic.

OS Homo sapiens.

XX	GB2317891-A.	QY	241	GAAPERTPVQGSWAHFGTRGSPDRGFCVVSPARPAEAEATSLGALSGTRHSHPSVG	300
PN	XX	Db	241	GAAPERTPVQGSWAHFGTRGSPDRGFCVVSPARPAEAEATSLGALSGTRHSHPSVG	300
PD	08-APR-1998.	QY	301	ROHHAGPPSTSRPPRWDTPCPVVAETHKHFYSSGDKQLRPSFLLSRLPSLTGARRL	360
PF	XX	Db	301	ROHHAGPPSTSRPPRWDTPCPVVAETHKHFYSSGDKQLRPSFLLSRLPSLTGARRL	360
XX	01-OCT-1997; 97GB-00020890.	QY	361	VETIFLGSPPMPTGPRRLPRLPQRYWQMRPLFLELLGNHACQPYGVLLKTHCPRAAVT	420
PR	01-OCT-1996; 96US-00724643.	Db	361	VETIFLGS-PPMPTGPRRLPRLPQRYWQMRPLFLELLGNHACQPYGVLLKTHCPRAAVT	419
PR	18-APR-1997; 97US-00844419.	QY	421	PAAGVCAREKPOGSAAPAEEDTDPRRLVQLLRQHSSPWQVGVFVRACLRLVPPGL-WG	479
PR	25-APR-1997; 97US-00846017.	Db	420	PAAGVCAREKPOGSAAPAEEDTDPRRLVQLLRQHSSPWQVGVFVRACLRLVPPGLWG	479
PR	06-MAY-1997; 97US-00851843.	QY	480	SRHNERRFLRNTKFKISLGKHAJLSLOELTWKMSVRDCAWLRRSPGVCVPAAEHRLREE	539
PR	09-MAY-1997; 97US-00854050.	Db	480	SRHNERRFLRNTKFKISLGKHAJLSLOELTWKMSVRDCAWLRRSPGVCVPAAEHRLREE	539
PR	14-AUG-1997; 97US-00911312.	QY	540	ILAKFLHMLMSVYVVELLRSPFYVTTTFOKNRFFFYRKSVMSKLSQISIGIRQHLKRVOLR	599
PR	14-AUG-1997; 97US-00912951.	Db	540	ILAKFLHMLMSVYVVELLRSPFYVTTTFOKNRFFFYRKSVMSKLSQISIGIRQHLKRVOLR	598
XX	(GERO-) GERON CORP.	QY	600	ELSEAEVQHRARPALLTSRLRIPKPDGLRPIVN-MDYVVGARTPRREKRAEHLTSRV	658
PA	(UYTE-) UNIV TECHNOLOGY CORP.	Db	599	ELSEAEVQHRARPALLTSRLRIPKPDGLRPIVN-MDYVVGARTPRREKRAEHLTSRV	657
XX	Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB, Andrews WH;	QY	658	KALFSVLNRYERARRPGLGASVLGLDDTHRAWRFTVLVRRAODPPPELYFVKVDVTGAYD	718
DR	WPI; 1998-171633/16.	Db	658	KALFSVLNRYERARRPGLGASVLGLDDTHRAWRFTVLVRRAODPPPELYFVKVDVTGAYD	717
XX	Pure and recombinant human Telomerase Reverse Transcriptase and its variants - are useful in the diagnosis, prognosis and treatment of cell proliferation conditions especially cancer and ageing.	QY	719	TIPQDRLETVASIIKQNTYCVRRYAVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVA	778
XX	Example 6; Page 231-232; 387pp; English.	Db	718	TIPQDRLETVASIIKQNTYCVRRYAVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVA	777
XX	The present sequence represents a fusion protein from an example of the present invention which describes human telomerase reverse transcriptase (hTERT). The present invention also describes the following methods: (A) determining whether a test compound is a modulator of hTERT, by detecting the change in hTERT recombinant protein or polynucleotide, on administration of the compound; (B) preparation of recombinant telomerase by contacting a protein preparation of hTERT with a telomerase RNA component; (C) detection of the hTERT RNA or protein in a sample by binding a relevant probe to the sample and detecting the complex formed or in the case of RNA detection, amplifying the product and correlating the presence of complex or amplification product with presence of hTERT in the sample; and (D) increasing the proliferation of a vertebrate cell by increasing hTERT expression; and (E) the use of an agent that causes an increase in cell vertebrate cell proliferation to create a medicament that inhibits ageing. A protein preparation of hTERT and the polynucleotide encoding hTERT can be used in the manufacture of medicaments for inhibiting the effect of ageing or cancer. Inhibitors of telomerase activity can be used to treat conditions that are associated with high telomerase activity. A protein preparation of hTERT can also be used in the new methods	QY	779	HLQTSPLRDVAVIEQSSSL-NEASSGLFDVFLRFMCHAVRIRGKSYVOCQIGIPQGSIL	837
XX		Db	778	HLQTSPLRDVAVIEQSSSL-NEASSGLFDVFLRFMCHAVRIRGKSYVOCQIGIPQGSIL	835
XX		QY	838	STLLCSLCYGDMMENKLFAGIRRDGLLRVDDFLVTPHLLTHAKTFTLTVRGVPEYGCV	897
XX		Db	836	STLLCSLCYGDMMENKLFAGIRRDGLLRVDDFLVTPHLLTHAKTFTLTVRG-PEYGCV	894
XX		QY	898	VNLKRTVNVPEDEALGGTAFVQMPAHGLFPW-CGLLLDTRLEVQSDVSSVARTSIRA	956
XX		Db	895	VNLKRTV--FPVEDEALGGTAFVQMPAHGLFPWVCGLLDTRLEVQSDVSSVARTSIRA	952
XX		QY	957	SLTFNRGFKAGR-NMRRKLFGLRLKCHSLFLDLQVNSLQVCTNTYKILLQAYRFHAC	1015
XX		Db	953	SLTFNRGFKAGR-NMRRKLFGLRLKCHSLFLDLQVNSLQVCTNTYKILLQAYRFHAC	1012
XX		QY	1016	VLQLPFHQQWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCH	1075
XX		Db	1013	VLQLPFHQQWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCH	1072
XX		QY	1076	QAFLLKLTTRHRTVYVPLGLSLRTAQOLSKRLPGTTLTALEAANPALPSDFKTIID	1132
XX		Db	1073	QAFLLKLTTRHRTVYVPLGLSLRTAQOLSKRLPGTTLTALEAANPAL-SDFKTIID	1128
XX	RESULT 39				
XX	AA000640				
XX	ID				
XX	AA000640 standard; protein; 1053 AA.				
XX	XX				
XX	AC				
XX	AA000640;				
XX	XX				
XX	26-JUL-1999 (first entry)				
XX	XX				
XX	DE				
XX	Altered C-terminused telomerase protein sequence.				
XX	XX				
XX	Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia; neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;				
XX	KW				

KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
 KW stem cell differentiation; organ regeneration; organ differentiation.
 XX

OS Homo sapiens.

XX Synthetic.

PN W09901560-A1.

XX

PD 14-JAN-1999.

XX

XX 01-JUL-1998; 98WO-US013835.

XX

PR 01-JUL-1997; 97US-0051410P.

PR

PR 21-JUL-1997; 97US-0053018P.

PR

PR 21-JUL-1997; 97US-0053329P.

PR

PR 04-AUG-1997; 97US-0054642P.

PR

PR 09-SEP-1997; 97US-0058287P.

XX

XX (CAMB-) CAMBIA BIOSYSTEMS LLC.

XX

PI Kilian A, Bowtell D;

XX

XX WPI; 1999-106060/09.

DR

DR N-PSDB; AAX18268.

XX

XX New isolated vertebrate telomerase genes - used to develop products for

PT treating cancers or for organ regeneration, nerve cell or brain cell

PT growth following injury or bone marrow transplantation.

PT

XX Claim 4; Fig 111-m; 134pp; English.

PS

XX This sequence is a truncated human telomerase of the invention. Primers

CC that amplify the telomerase coding sequence can be used in a method for

CC diagnosing cancer in a patient. The telomerase can be used for detection,

CC diagnosis and drug screening. Inhibitors of telomerase activity can be

CC used to treat cancers such as melanomas, other skin cancers,

CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,

CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin

CC growths. Enhancers of telomerase may be used to stimulate stem cell

CC proliferation and differentiation (expansion of haematopoietic stem cells

CC could be administered in the bone marrow transplant context). As well,

CC many tissues have stem cells. Proliferation of these cells may be useful

CC in wound healing, hair growth, treatment of disease such as Wilm's

CC tumour, organ regeneration or differentiation after injury or diseases,

CC nerve cell or brain cell growth following injury. Note: The C-terminus of

CC this sequence can be replaced by the sequence shown in AAY00654

XX

XX SQ Sequence 1053 AA;

Query Match 93.2%; Score 5555; DB 2; Length 1053;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 1052; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MPRAPRCVRSLLRSHYREVLPLATFVRRLGQWRLVQDGPAPRALVAQCLVCPVW 60

Db 1 MPRAPRCVRSLLRSHYREVLPLATFVRRLGQWRLVQDGPAPRALVAQCLVCPVW 60

Qy 61 DARPPPAAPSFRQVSCLELVARVLOPLCERGAQNVLAFCFALLDARGGPPPEAFTSVR 120

Db 61 DARPPPAAPSFRQVSCLELVARVLOPLCERGAQNVLAFCFALLDARGGPPPEAFTSVR 120

Qy 121 SYLPTNTVTDALRSGGAWGLLLRRVGDVLLVHLLARCALFVLVAPSCAYQVCGPPLVQLGA 180

Db 121 SYLPTNTVTDALRSGGAWGLLLRRVGDVLLVHLLARCALFVLVAPSCAYQVCGPPLVQLGA 180

Qy 181 ATQARPPPHASGRRRLGCRANWHSVREAGVPLGLPAPGARRRGSGASRLPLPKRPRR 240

Db 181 ATQARPPPHASGRRRLGCRANWHSVREAGVPLGLPAPGARRRGSGASRLPLPKRPRR 240

Qy 241 GAAPERTPVGGGWAHPGTRGSPDRGFCVVSPPAPAEATSLGALSGTRHSPSVG 300

Db 241 GAAPERTPVGGGWAHPGTRGSPDRGFCVVSPPAPAEATSLGALSGTRHSPSVG 300

Qy 301 ROHAGPPSTSRPRPWTDPCCPPVYAEKHFYSSGDKQELRPSFLSSLSRPSLTGARRL 360
 Db 301 ROHAGPPSTSRPRPWTDPCCPPVYAEKHFYSSGDKQELRPSFLSSLSRPSLTGARRL 360
 Qy 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
 Db 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
 Qy 421 PAAGVCAREKPGQSGVAAPBEEDTDPRRLVOLLRQHSHPWQVYGFVRACTLRRLVPPGLWGS 480
 Db 421 PAAGVCAREKPGQSGVAAPBEEDTDPRRLVOLLRQHSHPWQVYGFVRACTLRRLVPPGLWGS 480
 Qy 481 RHNERFLNNTKFIISLGKHAHLSLOELTWKMSVRDCAMLRSPGVCVGPAAEHLREEL 540
 Db 481 RHNERFLNNTKFIISLGKHAHLSLOELTWKMSVRDCAMLRSPGVCVGPAAEHLREEL 540
 Qy 541 LAKFLHMLSVVVELLRSGFFVYTTTFOKNRLFYFKSVMSKLSQSIGRQHLKRVOLRE 600
 Db 541 LAKFLHMLSVVVELLRSGFFVYTTTFOKNRLFYFKSVMSKLSQSIGRQHLKRVOLRE 600
 Qy 601 LSEAEVRQHREARPAALLTSRLRPIPKPDGLRPIVNMNDYVVGARTFRREKRAELTGRVKA 660
 Db 601 LSEAEVRQHREARPAALLTSRLRPIPKPDGLRPIVNMNDYVVGARTFRREKRAELTGRVKA 660
 Qy 661 LFSVLNRYERARRPGLLGASVGLDDEIHRARWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
 Db 661 LFSVLNRYERARRPGLLGASVGLDDEIHRARWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
 Qy 721 PQDLTEVTASIIKPQNTYCVRRYAVVQAAHGHVRFKASHVSTLTDLQPYMRQFVAHL 780
 Db 721 PQDLTEVTASIIKPQNTYCVRRYAVVQAAHGHVRFKASHVSTLTDLQPYMRQFVAHL 780
 Qy 781 QETSPLRDADVIRQSSSLNEASSGLEFDVFLRFMCHHAVRIRGKSYVQCQIPQSGIILSTL 840
 Db 781 QETSPLRDADVIRQSSSLNEASSGLEFDVFLRFMCHHAVRIRGKSYVQCQIPQSGIILSTL 840
 Qy 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
 Db 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
 Qy 901 RKTVMNFPVEDEALGCTAFVQMPAHGLFPMCGLLDTRTLEWQSDYSSYARTSIRASLT 960
 Db 901 RKTVMNFPVEDEALGCTAFVQMPAHGLFPMCGLLDTRTLEWQSDYSSYARTSIRASLT 960
 Qy 961 NRGFKAGRNMRRLFGVLRKCHSLFLDLQVNSLQVCTNIYKILLQAYRHFACVQLP 1020
 Db 961 NRGFKAGRNMRRLFGVLRKCHSLFLDLQVNSLQVCTNIYKILLQAYRHFACVQLP 1020
 Qy 1021 FHQQVWKNPTFFLRVISDTASLCYSILKAKNA 1052
 Db 1021 FHQQVWKNPTFFLRVISDTASLCYSILKAKNA 1052
 RESULT 40
 AAY00649
 ID AAY00649 standard; protein; 1093 AA.
 XX
 AC AAY00649;
 XX
 XX 26-JUL-1999 (first entry)
 DT
 XX
 DE Altered C-terminus telomerase (ver. 2) protein sequence.
 XX
 KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
 KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
 KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
 KW stem cell differentiation; organ regeneration; organ differentiation.
 OS Homo sapiens.
 OS Synthetic.
 XX W09901560-A1.
 PN
 XX

PD 14-JAN-1999.
 XX 01-JUL-1998; 98WO-US013835.
 XX 01-JUL-1997; 97US-0051410P.
 PR 21-JUL-1997; 97US-0053018P.
 PR 21-JUL-1997; 97US-0053329P.
 PR 04-AUG-1997; 97US-0054642P.
 PR 09-SEP-1997; 97US-0058287P.
 XX (CAMB-) CAMBIA BIOSYSTEMS LLC.
 PA Kilian A, Bowtell D;
 XX WPI; 1999-106060/09.
 XX N-PSDB; AAX18277.
 DR
 XX
 XX New isolated vertebrate telomerase genes - used to develop products for
 PT treating cancers or for organ regeneration, nerve cell or brain cell
 PT growth following injury or bone marrow transplantation.
 PT
 XX
 PS Claim 4; Fig 11a-f-ag; 134pp; English.
 XX
 XX This sequence is a truncated human telomerase of the invention. Primers
 CC that amplify the telomerase coding sequence can be used in a method for
 CC diagnosing cancer in a patient. The telomerase can be used for detection,
 CC diagnosis and drug screening. Inhibitors of telomerase activity can be
 CC used to treat cancers such as melanomas, other skin cancers,
 CC neuroblastomas, breast carcinomas, colon carcinomas, leukemias,
 CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
 CC growths. Enhancers of telomerase may be used to stimulate stem cell
 CC proliferation and differentiation (expansion of haematopoietic stem cells
 CC could be administered in the bone marrow transplant context). As well,
 CC many tissues have stem cells. Proliferation of these cells may be useful
 CC in wound healing, hair growth, treatment of disease such as Wilms
 CC tumour, organ regeneration or differentiation after injury or diseases,
 CC nerve cell or brain cell growth following injury. Note: The N-terminus of
 CC this sequence can be replaced by the sequences shown in AAY00656-
 CC and the C-terminus can be replaced by the sequence shown in AAY00654
 XX
 XX Sequence 1093 AA;
 SQ
 Query Match 92.5%; Score 5516; DB 2; Length 1093;
 Best Local Similarity 96.2%; Pred. No. 0;
 Matches 1051; Conservative 0; Mismatches 1; Indels 40; Gaps 1;
 QY 1 MPRAPRCRAVRSLLRSHYBEVLPLATFVRRLGPGWRLVQRGDPAAFRALVAQCLVCPW 60
 DB 1 MPRAPRCRAVRSLLRSHYBEVLPLATFVRRLGPGWRLVQRGDPAAFRALVAQCLVCPW 60
 QY 61 DARPPPAAPSFRQVCKELVARVLQRLCERGAKNVLAFAFGALLDGAAGRPPEATTTSVR 120
 DB 61 DARPPPAAPSFRQVCKELVARVLQRLCERGAKNVLAFAFGALLDGAAGRPPEATTTSVR 120
 QY 121 SYLNTNTVDALRGSGAWGLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
 DB 121 SYLNTNTVDALRGSGAWGLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
 QY 181 ATQARPPPHASGRRRLCERAWNHSVREAGVPLGPAARRRGSGASRSPLPKRRRR 240
 DB 181 ATQARPPPHASGRRRLCERAWNHSVREAGVPLGPAARRRGSGASRSPLPKRRRR 240
 QY 241 GAAPPERTPVQGGWAHGPRTGRGDRGFCVVSAPAEATSLGALSGRHRHSPSVG 300
 DB 241 GAAPPERTPVQGGWAHGPRTGRGDRGFCVVSAPAEATSLGALSGRHRHSPSVG 300
 QY 301 RQHAGPPPTSPRPWDTPCPVVAETKHFLYSSGDKQLRPSFLSLRPSLTGARRL 360
 DB 301 RQHAGPPPTSPRPWDTPCPVVAETKHFLYSSGDKQLRPSFLSLRPSLTGARRL 360
 QY 361 VETIFLGSPPWPGTPRRPLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
 DB 361 VETIFLGSPPWPGTPRRPLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420

QY 421 PAAGVCAREKPOGVSAAPEEDTDPRRLVQLLRHSSPWQVYGFVRACLRRLVPPGLMGS 480
 DB 421 PAAGVCAREKPOGVSAAPEEDTDPRRLVQLLRHSSPWQVYGFVRACLRRLVPPGLMGS 480
 QY 481 RHNERFLRNTKFFISLGHAKLSLQE----- 507
 DB 481 RHNERFLRNTKFFISLGHAKLSLQE----- 507
 QY 508 -----LTWKMVSVRDCAWLRRSPGVCVPAAEHRLREILAKFLHLMVSVVVELLSRF 560
 DB 541 LAKFLHMLTWKMVSVRDCAWLRRSPGVCVPAAEHRLREILAKFLHLMVSVVVELLSRF 600
 QY 561 FYVTETTFQKRLFFYRKSVMSKLSIGIRHQLKXVQLRELSAEVROHREARPAALLTSR 620
 DB 601 FYVTETTFQKRLFFYRKSVMSKLSIGIRHQLKXVQLRELSAEVROHREARPAALLTSR 660
 QY 621 LRFIPKPDGLRPIVNMDDYVVGARTFRREKRAERLTSRVKALFVSLNYERARRPGLLGASV 680
 DB 661 LRFIPKPDGLRPIVNMDDYVVGARTFRREKRAERLTSRVKALFVSLNYERARRPGLLGASV 720
 QY 681 LGLDDIHRARWTFVLVRQAQPPPELYFVKVDVTGAYDTIPQDRLTEVIAIIPQNTYC 740
 DB 721 LGLDDIHRARWTFVLVRQAQPPPELYFVKVDVTGAYDTIPQDRLTEVIAIIPQNTYC 780
 QY 741 VRRYAVVQKAAGHVVRKAFKSHVSTLTDLQPYMRQFVAHLOETSPLRDADVTEQSSSLNE 800
 DB 781 VRRYAVVQKAAGHVVRKAFKSHVSTLTDLQPYMRQFVAHLOETSPLRDADVTEQSSSLNE 840
 QY 801 ASSGLFDVFLRFMCHHVAIRKGSYVQCGIPQSGISLTLCLSCCYGDMENKLFAGIRRD 860
 DB 841 ASSGLFDVFLRFMCHHVAIRKGSYVQCGIPQSGISLTLCLSCCYGDMENKLFAGIRRD 900
 QY 861 GLLRLVDDFLVTPHLLTHAKTFLRTLVRGVEYGVVNLKTVVNFVDEALGGTAFV 920
 DB 901 GLLRLVDDFLVTPHLLTHAKTFLRTLVRGVEYGVVNLKTVVNFVDEALGGTAFV 960
 QY 921 QMPAHGLFPWCGLLDTRTLEVSQSDYSAYASTSRASLTFRNGKAGNMRKLVGLRL 980
 DB 961 QMPAHGLFPWCGLLDTRTLEVSQSDYSAYASTSRASLTFRNGKAGNMRKLVGLRL 1020
 QY 981 KCHSLFLDLQVNSLQTVCTNYYKILLQAYRFHACVQLQLPFHQQVWKNPTFFLRVISDTA 1040
 DB 1021 KCHSLFLDLQVNSLQTVCTNYYKILLQAYRFHACVQLQLPFHQQVWKNPTFFLRVISDTA 1080
 QY 1041 SLCSYILKAKNA 1052
 DB 1081 SLCSYILKAKNA 1092
 RESULT 41
 AAY00652
 ID AAY00652 standard; protein; 1041 AA.
 XX
 AC AAY00652;
 DT 26-JUL-1999 (first entry)
 XX
 DE Altered C-terminus telomerase lacking motif A (ver. 2) protein sequence.
 KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
 KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
 KW smooth muscle cell hyperplasia; stem cell proliferation; Wilms' tumour;
 KW stem cell differentiation; organ regeneration; organ differentiation.
 XX
 OS Homo sapiens.
 OS Synthetic.
 FN WO9901560-A1.
 XX
 PD 14-JAN-1999.
 XX 01-JUL-1998; 98WO-US013835.
 XX 01-JUL-1997; 97US-0051410P.
 PR 21-JUL-1997; 97US-0053018P.
 PR 21-JUL-1997; 97US-0053329P.
 PR 04-AUG-1997; 97US-0054642P.
 PR 09-SEP-1997; 97US-0058287P.
 XX (CAMB-) CAMBIA BIOSYSTEMS LLC.
 PA Kilian A, Bowtell D;
 XX WPI; 1999-106060/09.
 XX N-PSDB; AAX18277.
 DR
 XX
 XX New isolated vertebrate telomerase genes - used to develop products for
 PT treating cancers or for organ regeneration, nerve cell or brain cell
 PT growth following injury or bone marrow transplantation.
 PT
 XX
 PS Claim 4; Fig 11a-f-ag; 134pp; English.
 XX
 XX This sequence is a truncated human telomerase of the invention. Primers
 CC that amplify the telomerase coding sequence can be used in a method for
 CC diagnosing cancer in a patient. The telomerase can be used for detection,
 CC diagnosis and drug screening. Inhibitors of telomerase activity can be
 CC used to treat cancers such as melanomas, other skin cancers,
 CC neuroblastomas, breast carcinomas, colon carcinomas, leukemias,
 CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
 CC growths. Enhancers of telomerase may be used to stimulate stem cell
 CC proliferation and differentiation (expansion of haematopoietic stem cells
 CC could be administered in the bone marrow transplant context). As well,
 CC many tissues have stem cells. Proliferation of these cells may be useful
 CC in wound healing, hair growth, treatment of disease such as Wilms
 CC tumour, organ regeneration or differentiation after injury or diseases,
 CC nerve cell or brain cell growth following injury. Note: The N-terminus of
 CC this sequence can be replaced by the sequences shown in AAY00656-
 CC and the C-terminus can be replaced by the sequence shown in AAY00654
 XX
 XX Sequence 1093 AA;
 SQ
 Query Match 92.5%; Score 5516; DB 2; Length 1093;
 Best Local Similarity 96.2%; Pred. No. 0;
 Matches 1051; Conservative 0; Mismatches 1; Indels 40; Gaps 1;
 QY 1 MPRAPRCRAVRSLLRSHYBEVLPLATFVRRLGPGWRLVQRGDPAAFRALVAQCLVCPW 60
 DB 1 MPRAPRCRAVRSLLRSHYBEVLPLATFVRRLGPGWRLVQRGDPAAFRALVAQCLVCPW 60
 QY 61 DARPPPAAPSFRQVCKELVARVLQRLCERGAKNVLAFAFGALLDGAAGRPPEATTTSVR 120
 DB 61 DARPPPAAPSFRQVCKELVARVLQRLCERGAKNVLAFAFGALLDGAAGRPPEATTTSVR 120
 QY 121 SYLNTNTVDALRGSGAWGLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
 DB 121 SYLNTNTVDALRGSGAWGLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
 QY 181 ATQARPPPHASGRRRLCERAWNHSVREAGVPLGPAARRRGSGASRSPLPKRRRR 240
 DB 181 ATQARPPPHASGRRRLCERAWNHSVREAGVPLGPAARRRGSGASRSPLPKRRRR 240
 QY 241 GAAPPERTPVQGGWAHGPRTGRGDRGFCVVSAPAEATSLGALSGRHRHSPSVG 300
 DB 241 GAAPPERTPVQGGWAHGPRTGRGDRGFCVVSAPAEATSLGALSGRHRHSPSVG 300
 QY 301 RQHAGPPPTSPRPWDTPCPVVAETKHFLYSSGDKQLRPSFLSLRPSLTGARRL 360
 DB 301 RQHAGPPPTSPRPWDTPCPVVAETKHFLYSSGDKQLRPSFLSLRPSLTGARRL 360
 QY 361 VETIFLGSPPWPGTPRRPLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
 DB 361 VETIFLGSPPWPGTPRRPLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420

XX 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX (CAMB-) CAMBIA BIOSYSTEMS LLC.
PA Kilian A, Bowtell D;
XX WPI; 1999-106060/09.
DR N-PSDB; AAX18280.
XX
New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX
XX Claim 4; Fig 11am-an; 134pp; English.
XX
CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
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CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The N-terminus of
CC this sequence can be replaced by the sequences shown in AAY00656-Y00658,
CC and the C-terminus can be replaced by the sequence shown in AAY00654
XX
SQ Sequence 1041 AA;
Query Match 91.7%; Score 5467; DB 2; Length 1041;
Best Local Similarity 98.8%; Pred. No. 0;
Matches 1039; Conservative 0; Mismatches 1; Indels 12; Gaps 1;
QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRLRGQWRLVQRPAAFRALVAQCLVCVPW 60
DB 1 MPRAPRCRAVRSLLRSHYREVLPATFVRLRGQWRLVQRPAAFRALVAQCLVCVPW 60
QY 61 DARPPPAAPSFQVSCLELVARVQLRCERGAKNVLAFGALLDARGGPPPEAFTTSVR 120
DB 61 DARPPPAAPSFQVSCLELVARVQLRCERGAKNVLAFGALLDARGGPPPEAFTTSVR 120
QY 121 SYLPNTVTDALRGSGANGLLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
DB 121 SYLPNTVTDALRGSGANGLLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
QY 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGLPAPGARRRGGSASRSLPLPKRPRR 240
DB 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGLPAPGARRRGGSASRSLPLPKRPRR 240
QY 241 GAAPEPERTPVGGSWAHPCGTRGSDRGFCVVSPPARPAEATSLGALSGRHSHPSVG 300
DB 241 GAAPEPERTPVGGSWAHPCGTRGSDRGFCVVSPPARPAEATSLGALSGRHSHPSVG 300
QY 301 RQHAGPPTSRPRPDWTPCPVYAEKHFILYSSGDKQLRPSFLLSLRPSLTGARLL 360
DB 301 RQHAGPPTSRPRPDWTPCPVYAEKHFILYSSGDKQLRPSFLLSLRPSLTGARLL 360
QY 361 VETIFLGSRPWPGTTPRLPRLQRYQWMPRLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
DB 361 VETIFLGSRPWPGTTPRLPRLQRYQWMPRLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
QY 421 PAAGVCAREKPOGSAAPBEEDTDPRRLVQLLRQHSHPWQVYGFVRACLRLRLLVPPGLWGS 480

DB 421 PAAGVCAREKPOGSAAPBEEDTDPRRLVQLLRQHSHPWQVYGFVRACLRLRLLVPPGLWGS 480
QY 481 RHNERFLRNTKKFISLGKHAKLSLOBLTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
DB 481 RHNERFLRNTKKFISLGKHAKLSLOBLTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
QY 541 LAKFLHLMVSVYVVELLSRFFVYVTTTFQKNRLEFFYRKSVMSKLSQSIGIRQHKLKVQURE 600
DB 541 LAKFLHLMVSVYVVELLSRFFVYVTTTFQKNRLEFFYRKSVMSKLSQSIGIRQHKLKVQURE 600
QY 601 LSEAEVRQREARPPALLTSRLRIPKPDGLRPINMDYVVGARTFREKKAERLTSRVKA 660
DB 601 LSEAEVRQREARPPALLTSRLRIPKPDGLRPINMDYVVGARTFREKKAERLTSRVKA 660
QY 661 LFSVLNVERARRRGLLGASVLGLDDIHRARWTFVLVRVRAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNVERARRRGLLGASVLGLDDIHRARWTFVLVRVRAQDPPPELYFVKVDVTGAYDTI 720
QY 721 PDRLTEVIASIIKPQNTYCVRRYAVVQAAHGHVKAFAKSHVSTLTLDLPYMRQFVAHL 780
DB 721 PDRLTEVIASIIKPQNTYCVRRYAVVQAAHGHVKAFAKSHVSTLTLDLPYMRQFVAHL 780
QY 781 QETSPLRDAVVIRQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQIPOGSIILSTL 840
DB 781 QETSPLRDAVVIRQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQIPOGSIILSTL 840
QY 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDPLVTPHLTHAKTFLRLTVRGVPEYGCVVNL 900
DB 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDPLVTPHLTHAKTFLRLTVRGVPEYGCVVNL 900
QY 901 RKTVVNFPVEDEALGTAFAVQMPAHGLFPWCGLLLDTRTLEVSQSYSSVARTSIRASLT 960
DB 901 RKTVVNFPVEDEALGTAFAVQMPAHGLFPWCGLLLDTRTLEVSQSYSSVARTSIRASLT 960
QY 961 NRGFKAGRMRRKLPVGLRLKCHSLFDLQVNSLQTVCTNIYKILLQAYRFHACVQLP 1020
DB 961 NRGFKAGRMRRKLPVGLRLKCHSLFDLQVNSLQTVCTNIYKILLQAYRFHACVQLP 1020
QY 1021 FHOQVWKNPTFFLRVISTDTSALCYSLKAKNA 1052
DB 1021 FHOQVWKNPTFFLRVISTDTSALCYSLKAKNA 1052
QY 1009 FHOQVWKNPTFFLRVISTDTSALCYSLKAKNA 1040
DB 1009 FHOQVWKNPTFFLRVISTDTSALCYSLKAKNA 1040
RESULT 42
AAY00643
ID AAY00643 standard; protein; 1041 AA.
XX
AC AAY00643;
XX
DT 26-JUL-1999 (first entry)
XX
DE Altered C-terminused telomerase protein sequence lacking motif A.
XX
KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO9901560-A1.
XX
PD 14-JAN-1999.
XX
PF 01-JUL-1998; 98WO-US013835.
XX
PR 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX

PA	(CAMB-) CAMBIA BIOSYSTEMS LLC.	
PI	Kilian A, Bowtell D;	
XX	WPI; 1999-106060/09.	
DR	N-PSDB; AX18271.	
XX	New isolated vertebrate telomerase genes - used to develop products for	
PT	treating cancers or for organ regeneration, nerve cell or brain cell	
PT	growth following injury or bone marrow transplantation.	
XX		
PS	Class 4; Fig 11r-s; 134pp; English.	
XX		
CC	This sequence is a truncated human telomerase of the invention. Primers	
CC	that amplify the telomerase coding sequence can be used in a method for	
CC	diagnosing cancer in a patient. The telomerase can be used for detection,	
CC	diagnosis and drug screening. Inhibitors of telomerase activity can be	
CC	used to treat cancers such as melanomas, other skin cancers,	
CC	neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,	
CC	lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin	
CC	growths. Enhancers of telomerase may be used to stimulate stem cell	
CC	proliferation and differentiation (expansion of haematopoietic stem cells	
CC	could be administered in the bone marrow transplant context). As well,	
CC	many tissues have stem cells. Proliferation of these cells may be useful	
CC	in wound healing, hair growth, treatment of disease such as Wilm's	
CC	tumour, organ regeneration or differentiation after injury or diseases,	
CC	nerve cell or brain cell growth following injury. Note: The C-terminus of	
CC	this sequence can be replaced by the sequence shown in AAY00654	
XX		
SQ	Sequence 1041 AA;	
	Query March 91.7%; Score 5467; DB 2; Length 1041;	
	Best Local Similarity 98.8%; Pred. No. 0;	
	Matches 1039; Conservative 0; Mismatches 1; Indels 12; Gaps 1;	
Qy	1 MPRAPRCRAVRSLLRSHYREVLPLATFVRLGQWRLVQRGDPAAFRALVAQCLVCPW 60	
Db	1 MPRAPRCRAVRSLLRSHYREVLPLATFVRLGQWRLVQRGDPAAFRALVAQCLVCPW 60	
Qy	61 DARPPPAAPSRFQVSCLELVARVLQRLCERGAKNVLAFLGALLDGAAGPPEAFTSVR 120	
Db	61 DARPPPAAPSRFQVSCLELVARVLQRLCERGAKNVLAFLGALLDGAAGPPEAFTSVR 120	
Qy	121 SYLPTNTVDALRGSGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180	
Db	121 SYLPTNTVDALRGSGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180	
Qy	181 ATQARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPGARRRGSSASRSLPLKPRRR 240	
Db	181 ATQARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPGARRRGSSASRSLPLKPRRR 240	
Qy	241 GAAPERTPVGGSWAHFGRTRGSPDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG 300	
Db	241 GAAPERTPVGGSWAHFGRTRGSPDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG 300	
Qy	301 RQHAGPPTSTRPRPDWTPCPVVAETKHFLYSSGDKQLPSPFLSLSPSLTGARRL 360	
Db	301 RQHAGPPTSTRPRPDWTPCPVVAETKHFLYSSGDKQLPSPFLSLSPSLTGARRL 360	
Qy	361 VETIFLGSPPMPGTPRRLPRLPQRYQWQMRPLFLELLGNHQAQCPYGVLLKTHCPRAAVT 420	
Db	361 VETIFLGSPPMPGTPRRLPRLPQRYQWQMRPLFLELLGNHQAQCPYGVLLKTHCPRAAVT 420	
Qy	421 PAAGVCAREKPGQSVNAABEEEDTPRRLVOLLRQHSSPWQVYGFVRACLRLVPPGLWGS 480	
Db	421 PAAGVCAREKPGQSVNAABEEEDTPRRLVOLLRQHSSPWQVYGFVRACLRLVPPGLWGS 480	
Qy	481 RHNERFLRNTKFFISLGHAKLSLQELTWKMSVRDCAWLRRSPGCVPAAEHRLREEI 540	
Db	481 RHNERFLRNTKFFISLGHAKLSLQELTWKMSVRDCAWLRRSPGCVPAAEHRLREEI 540	
Qy	541 LAKFLHMLSVTVVLELLRSFFVTTTFOKNRLFYRKSVWSKLQSIGIROHLKRVQLRE 600	
Db	541 LAKFLHMLSVTVVLELLRSFFVTTTFOKNRLFYRKSVWSKLQSIGIROHLKRVQLRE 600	
Qy	601 LSEAEVROHREARPAALLTSRLRFIPKPDGLRIPVNDYVVGARTFRREKRAERLTSRVKA 660	
Db	601 LSEAEVROHREARPAALLTSRLRFIPKPDGLRIPVNDYVVGARTFRREKRAERLTSRVKA 660	
Qy	661 LFSVLNIEARPPGLLGASVLGDDIHRARWTFVLRVAQDPPPELYFYVKVDVTGAYDTI 720	
Db	661 LFSVLNIEARPPGLLGASVLGDDIHRARWTFVLRVAQDPPPELYFYVKVDVTGAYDTI 720	
Qy	721 PODRLTEVIASIIKPONTYCVRRYAVVOKAAAGHVKAFKSHVSTLTDLOPYMROQFVAHL 780	
Db	721 PODRLTEVIASIIKPONTYCVRRYAVVOKAAAGHVKAFKSHVSTLTDLOPYMROQFVAHL 780	
Qy	781 QTSPLRDAVITEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSVVQCQGIPOQSILSTL 840	
Db	781 QTSPLRDAVITEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSVVQCQGIPOQSILSTL 840	
Qy	841 LCSLCYGDWENKLFAGIRBDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGVEYGCVVNL 900	
Db	841 LCSLCYGDWENKLFAGIRBDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGVEYGCVVNL 900	
Qy	901 RKTVMNPFVEDEALGGTAFVQMPAHGLFPWCGLLDTTLEVSQSDYSYARTSIRASLTF 960	
Db	901 RKTVMNPFVEDEALGGTAFVQMPAHGLFPWCGLLDTTLEVSQSDYSYARTSIRASLTF 960	
Qy	961 NRGFKAGNMRRKLFVGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVQLQLP 1020	
Db	961 NRGFKAGNMRRKLFVGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVQLQLP 1020	
Qy	1021 FHOQWKNPTFFLRVDSITASLCYSILKAKNA 1052	
Db	1009 FHOQWKNPTFFLRVDSITASLCYSILKAKNA 1040	
	RESULT 43	
	AAY00639	
ID	AAY00639 standard; protein; 948 AA.	
AC	AAY00639;	
XX	26-JUL-1999 (first entry)	
DE	N-terminal truncated telomerase protein sequence.	
KW	Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;	
KW	neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;	
KW	smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;	
XX	stem cell differentiation; organ regeneration; organ differentiation.	
OS	Homo sapiens.	
XX	Synthetic.	
XX	W09901560-A1.	
XX	14-JAN-1999.	
XX	01-JUL-1998; 98WO-US013835.	
XX	01-JUL-1997; 97US-0051410P.	
XX	21-JUL-1997; 97US-0053018P.	
XX	21-JUL-1997; 97US-0053329P.	
XX	04-AUG-1997; 97US-0054642P.	
XX	09-SEP-1997; 97US-0058287P.	
XX	(CAMB-) CAMBIA BIOSYSTEMS LLC.	
XX	Kilian A, Bowtell D;	
XX	WPI; 1999-106060/09.	
XX	N-PSDB; AAY00639.	
XX	New isolated vertebrate telomerase genes - used to develop products for	
PT		

PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX Claim 4; Fig 11j-k; 134pp; English.

XX This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury

XX SQ Sequence 948 AA;

Query Match 84.0%; Score 5008; DB 2; Length 948;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 946; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPCRAVRSLLRSHYREVLPLATFVRRLPGQWRLVORGDPAAPRALVAQCLVCPW 60
DB 1 MPRAPCRAVRSLLRSHYREVLPLATFVRRLPGQWRLVORGDPAAPRALVAQCLVCPW 60
QY 61 DARPPPAAPSPROVQSCLELVARVLQRLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120
DB 61 DARPPPAAPSPROVQSCLELVARVLQRLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120
QY 121 SYLNTVTDALRGSGANGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPLYQLGA 180
DB 121 SYLNTVTDALRGSGANGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPLYQLGA 180
QY 181 ATOARPPPHASGPRRRRCERAWNHSVREAGVPLGLPAGARRRGGASRSLLPKRPRR 240
DB 181 ATOARPPPHASGPRRRRCERAWNHSVREAGVPLGLPAGARRRGGASRSLLPKRPRR 240
QY 241 GAAPEPERTVPGQSWAHPGTRGSPDRGFCVWSPARPABEATSGALSGTRHSHPSVG 300
DB 241 GAAPEPERTVPGQSWAHPGTRGSPDRGFCVWSPARPABEATSGALSGTRHSHPSVG 300
QY 301 ROHAGAPSTSRPPRPWDTPCPVYAEKHLFVSSGDKQLRPSFLSSLRPSLTGARRL 360
DB 301 ROHAGAPSTSRPPRPWDTPCPVYAEKHLFVSSGDKQLRPSFLSSLRPSLTGARRL 360
QY 361 VETIFLGSRRPMPGTPRRLPRLPORYWQMRPLFLELGNHAQCPYGVLLKTHCPRLAAVT 420
DB 361 VETIFLGSRRPMPGTPRRLPRLPORYWQMRPLFLELGNHAQCPYGVLLKTHCPRLAAVT 420
QY 421 PAAGVCAREKPGQSWAHPGTRGSPDRGFCVWSPARPABEATSGALSGTRHSHPSVG 480
DB 421 PAAGVCAREKPGQSWAHPGTRGSPDRGFCVWSPARPABEATSGALSGTRHSHPSVG 480
QY 481 RHNERRFLNTKFKFISLKGAKLSLQBLTWKMSVRDCAWLRRSPGVCVPAAEHRLREEI 540
DB 481 RHNERRFLNTKFKFISLKGAKLSLQBLTWKMSVRDCAWLRRSPGVCVPAAEHRLREEI 540
QY 541 LAKFLHLMWSVYVVELLRSFYVTTTFOKNRLFFYFKSVWSKLQSIGIQLHKLKVQLRE 600
DB 541 LAKFLHLMWSVYVVELLRSFYVTTTFOKNRLFFYFKSVWSKLQSIGIQLHKLKVQLRE 600
QY 601 LSEAEVQHQREARPAALLTSRLRFTPKDGLRPIVNMDDYVVGARTFREKAEARLTSRVA 660
DB 601 LSEAEVQHQREARPAALLTSRLRFTPKDGLRPIVNMDDYVVGARTFREKAEARLTSRVA 660
QY 661 LFSVLNTERARRPGLLGASVLGDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNTERARRPGLLGASVLGDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720

QY 721 PQDLTEVIAIIKPNQTYCVRRYAVVQKAAHGHRKAFKSHVSTLTDLPYMQFVAHL 780
DB 721 PQDLTEVIAIIKPNQTYCVRRYAVVQKAAHGHRKAFKSHVSTLTDLPYMQFVAHL 780
QY 781 QETSPLRDADVIVQSSSLNEASSGLFDVFLRFMCHHAAVRIRGKSYVOCQIGIPQSGIISTL 840
DB 781 QETSPLRDADVIVQSSSLNEASSGLFDVFLRFMCHHAAVRIRGKSYVOCQIGIPQSGIISTL 840
QY 841 LCSICVGDMDENKLPAGIRRRDGLLRLLVDDFLLVTPHLTHAKTFLRTLVRGVPEYGCVVNL 900
DB 841 LCSICVGDMDENKLPAGIRRRDGLLRLLVDDFLLVTPHLTHAKTFLRTLVRGVPEYGCVVNL 900
QY 901 RKTVMFPVDEALGCTAFVQMPAHGLFPMCGLLDTRTLEVSQSDYS 947
DB 901 RKTVMFPVDEALGCTAFVQMPAHGLFPMCGLLDTRTLEVSQSDYS 947

RESULT 44

AAV00648

ID AAV00648 standard; protein; 948 AA.

XX AC AAV00648;

XX DT 26-JUL-1999 (first entry)

XX DE Truncated telomerase 3 protein sequence.

XX KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.

XX OS Homo sapiens.

XX OS Synthetic.

XX PN WO9901560-A1.

XX PD 14-JAN-1999.

XX PF 01-JUL-1998; 98WO-US013835.

XX PR 01-JUL-1997; 97US-0051410P.

XX PR 21-JUL-1997; 97US-0053018P.

XX PR 21-JUL-1997; 97US-0053329P.

XX PR 04-AUG-1997; 97US-0054642P.

XX PR 09-SEP-1997; 97US-0058287P.

XX PA (CAMP-) CAMBIA BIOSYSTEMS LLC.

XX PI Kilian A, Bowtell D;

XX DR WPI; 1999-106060/09.

XX DR N-PSDB; AAX18276.

XX PT New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.

XX PS Claim 4; Fig 11ad-ae; 134pp; English.

XX CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's

CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The N-terminus of
CC this sequence can be replaced by the sequences shown in AAY00656-Y00658
XX
SQ Sequence 948 AA;

Query Match		83.9%;	Score 5004;	DB 2;	Length 948;
Best Local Similarity		99.9%;	Pred. No. 0;		
Matches 946;		Conservative	0;	Mismatches	1; Indels 0; Gaps 0;
QY	1	MPRAPRCRAVRSLLRSHYREVLP	PLATFVRRLGPOGWRVLVQRGDPAAPRALVAQCLVCVPW	60	
Db	1	MPRAPRCRAVPSLLRSHYREVLP	PLATFVRRLGPOGWRVLVQRGDPAAPRALVAQCLVCVPW	60	
QY	61	DARPPAAPSPFQVSCLELVARVL	ORLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR	120	
Db	61	DARPPAAPSPFQVSCLELVARVL	ORLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR	120	
QY	121	SYLPNTVTDALRGSGAWGLLRR	VGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180	
Db	121	SYLPNTVTDALRGSGAWGLLRR	VGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180	
QY	181	ATQARPPPHASGPRRLRCER	AWNHSVREAGVPLGLPAPGARRRGGASRSLLPLPKPRR	240	
Db	181	ATQARPPPHASGPRRLRCER	AWNHSVREAGVPLGLPAPGARRRGGASRSLLPLPKPRR	240	
QY	241	GAAPERTPVGQSWAHGPRTR	GPSDRGFCVSPARPABEATSGALSGTRHSPSVG	300	
Db	241	GAAPERTPVGQSWAHGPRTR	GPSDRGFCVSPARPABEATSGALSGTRHSPSVG	300	
QY	301	QOHAGPPSTSRPRPMDT	PCPPVYAEKHFLLXSSGDKQLRPSFLLSSRLPSLTGARRL	360	
Db	301	QOHAGPPSTSRPRPMDT	PCPPVYAEKHFLLXSSGDKQLRPSFLLSSRLPSLTGARRL	360	
QY	361	VETIFLGRPMWCTPRRL	PLRPLRQYQWMPLELILGNHAQCPYGVLLKTHCPLRAAVT	420	
Db	361	VETIFLGRPMWCTPRRL	PLRPLRQYQWMPLELILGNHAQCPYGVLLKTHCPLRAAVT	420	
QY	421	PAAGVCAREKPGQSWAAPE	EDTDPRRLVQLLRQHSPPWQVGFVRACLRLRVPDGLWS	480	
Db	421	PAAGVCAREKPGQSWAAPE	EDTDPRRLVQLLRQHSPPWQVGFVRACLRLRVPDGLWS	480	
QY	481	RHNERFLRNTKFI	SLGKIAKLSQBLTWKMSVRDCAWLRRSPGVGCVPAAEHRLREI	540	
Db	481	RHNERFLRNTKFI	SLGKIAKLSQBLTWKMSVRDCAWLRRSPGVGCVPAAEHRLREI	540	
QY	541	LAKFLHLMVSVYVVELLS	RFYVTTTFOKNRLFYVRKSVWSKLSQIGIRQHLKRVQIRE	600	
Db	541	LAKFLHLMVSVYVVELLS	RFYVTTTFOKNRLFYVRKSVWSKLSQIGIRQHLKRVQIRE	600	
QY	601	LSBAEVRQHREAR	PALLTSRLRIFPKPDGLRPIVNMDDYVVGARTFRREKRAERLTSRVKA	660	
Db	601	LSBAEVRQHREAR	PALLTSRLRIFPKPDGLRPIVNMDDYVVGARTFRREKRAERLTSRVKA	660	
QY	661	LFSVLNVERARRCL	GASVLGDDTHRAWRFTVLVRADQPPPELYFVKVDVTGAYDTI	720	
Db	661	LFSVLNVERARRCL	GASVLGDDTHRAWRFTVLVRADQPPPELYFVKVDVTGAYDTI	720	
QY	721	PQDLTEVIASII	KPQNTYCVRYAVVQKAAGHVRKAFKSHVSTLTDLPQYMRQFVAHL	780	
Db	721	PQDLTEVIASII	KPQNTYCVRYAVVQKAAGHVRKAFKSHVSTLTDLPQYMRQFVAHL	780	
QY	781	QETSPLRDVAV	IFQSSSLNEASSGLFDVFLRFMCHHAVIRKGSYVQCQIPQSGILSTL	840	
Db	781	QETSPLRDVAV	IFQSSSLNEASSGLFDVFLRFMCHHAVIRKGSYVQCQIPQSGILSTL	840	
QY	841	LCSLCYGDMENK	LIFAGIRGDLGLLRVDDFLVTPHLTHAKFTLRLVRGVEYCCVNL	900	
Db	841	LCSLCYGDMENK	LIFAGIRGDLGLLRVDDFLVTPHLTHAKFTLRLVRGVEYCCVNL	900	
QY	901	RKTVMNFPVE	DALGGTAFVQMPAHGLFPWCGLLDDTRTLEVSQDYS	947	
Db	901	RKTVMNFPVE	DALGGTAFVQMPAHGLFPWCGLLDDTRTLEVSQDYS	947	

RESULT 45
AAY00642

ID AAY00642 standard; protein; 936 AA.

XX AC AAY00642;

XX DT 26-JUL-1999 (first entry)

XX Truncated telomerase protein sequence lacking motif A.

XX Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilms' tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.

XX OS Homo sapiens.

XX OS Synthetic.

XX PN WO9901560-A1.

XX 14-JAN-1999.

XX PF 01-JUL-1998; 98WO-US013835.

XX PF 01-JUL-1997; 97US-0051410P.

XX PF 21-JUL-1997; 97US-0053018P.

XX PF 21-JUL-1997; 97US-0053329P.

XX PF 04-AUG-1997; 97US-0054642P.

XX PF 09-SEP-1997; 97US-0058287P.

XX (CAME-) CAMBIA BIOSYSTEMS LLC.

XX PI Kilian A, Bowtell D;

XX DR WPI; 1999-106060/09.

XX DR N-PSDB; AAX18270.

XX New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.

XX PS Claim 4; Fig 11p-q; 134pp; English.

XX This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilms' ⁹
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury

XX SQ Sequence 936 AA;

Query Match 82.7%; Score 4932; DB 2; Length 936;

Best Local Similarity 98.7%; Pred. No. 0;

Matches 935; Conservative 0; Mismatches 0; Indels 12; Gaps 1;

QY 1 MPAPRCRAVRSLLRSHYREVLP

PLATFVRRLGPOGWRVLVQRGDPAAPRALVAQCLVCVPW 60

Db 1 MPAPRCRAVRSLLRSHYREVLP

PLATFVRRLGPOGWRVLVQRGDPAAPRALVAQCLVCVPW 60

QY 61 DARPPAAPSPFQVSCLELVARVL

ORLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120

Db 61 DARPPAAPSPFQVSCLELVARVL

ORLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120

Qy	121	SYLPNTVTDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180
Db	121	SYLPNTVTDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180
Qy	181	ATQARPPPHASGPRRRIGCERAWNHSVREAGVPLGLPAPGARRGGASRSLSPLPKRPRR	240
Db	181	ATQARPPPHASGPRRRIGCERAWNHSVREAGVPLGLPAPGARRGGASRSLSPLPKRPRR	240
Qy	241	GAAPEPERTVPGQSWAHPCRTGSDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG	300
Db	241	GAAPEPERTVPGQSWAHPCRTGSDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG	300
Qy	301	RQHAGPPSTSRPPRPMDTFCPPVYAEKHFLYSSGDKQLRPSFLSSLRPSLTGARRL	360
Db	301	RQHAGPPSTSRPPRPMDTFCPPVYAEKHFLYSSGDKQLRPSFLSSLRPSLTGARRL	360
Qy	361	VETIFLGSRRWPGTTPRRLPRLQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT	420
Db	361	VETIFLGSRRWPGTTPRRLPRLQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT	420
Qy	421	PAAGVCAREXPOGSAVAPEEEDTPRLVOLLRHSSPWOVYGFVRACTLRRLVPPGLWGS	480
Db	421	PAAGVCAREXPOGSAVAPEEEDTPRLVOLLRHSSPWOVYGFVRACTLRRLVPPGLWGS	480
Qy	481	RHNERFLRNTKKFISLGKHAHLSQELTWKMSVRDCAWLRRSPGVGCVPAAEHLRREEI	540
Db	481	RHNERFLRNTKKFISLGKHAHLSQELTWKMSVRDCAWLRRSPGVGCVPAAEHLRREEI	540
Qy	541	LAKFLHLMVSVYVVELLRSFYVTTTFQKNRLFYRKSWKLSQSIGIRQHKLKRVOLRE	600
Db	541	LAKFLHLMVSVYVVELLRSFYVTTTFQKNRLFYRKSWKLSQSIGIRQHKLKRVOLRE	600
Qy	601	LSAEVRQHREARPAALLTSRLRTPKPDGLRPIVNMDDYVVGARTFRREKAEARLTSRVKA	660
Db	601	LSAEVRQHREARPAALLTSRLRTPKPDGLRPIVNMDDYVVGARTFRREKAEARLTSRVKA	660
Qy	661	LFSVLNVERARRPGLLGASVLGLDDIHRWRTTFVLRVRAQDPPPELYFVVKDVTGAYDTI	720
Db	661	LFSVLNVERARRPGLLGASVLGLDDIHRWRTTFVLRVRAQDPPPELYFVK-----	710
Qy	721	PQRLTEVIAIIPQNTYCVRRYAVVQKAAHGHRKAFKSHVSTLTDLPYMRQFVAHL	780
Db	711	--DRLTEVIAIIPQNTYCVRRYAVVQKAAHGHRKAFKSHVSTLTDLPYMRQFVAHL	768
Qy	781	QETSPURDVAVIEQSSSLNEASGLDFVLRFWCHHAVIRGKSYVQCQIGPOGSILSTL	840
Db	769	QETSPURDVAVIEQSSSLNEASGLDFVLRFWCHHAVIRGKSYVQCQIGPOGSILSTL	828
Qy	841	LCSLCYGDMENKLFAGIRRDGLLRLVDDFLLVTPHLTHAKTFLRTLVRGVPEYGCVVNL	900
Db	829	LCSLCYGDMENKLFAGIRRDGLLRLVDDFLLVTPHLTHAKTFLRTLVRGVPEYGCVVNL	888
Qy	901	RKTWNFPVDEALGGTAFQMPAHGLFPWCGLLTDTRTLEVOQSDYS	947
Db	889	RKTWNFPVDEALGGTAFQMPAHGLFPWCGLLTDTRTLEVOQSDYS	935
RESULT 46			
AY00651	ID		
XX	AY00651	standard; protein; 936 AA.	
XX	AY00651;		
XX	XX		
XX	26-JUL-1999	(first entry)	
XX	Truncated telomerase (ver. 2)	protein sequence lacking motif A.	
XX	Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;		
XX	neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;		
XX	smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;		
XX	stem cell differentiation; organ regeneration; organ differentiation.		

OS	Homo sapiens.		
OS	Synthetic.		
PN	WO9901560-A1.		
XX	14-JAN-1999.		
PD			
XX	01-JUL-1998;	98WO-US013835.	
XX	01-JUL-1997;	97US-0051410P.	
PR	21-JUL-1997;	97US-0053018P.	
PR	21-JUL-1997;	97US-0053329P.	
PR	04-AUG-1997;	97US-0054642P.	
PR	09-SEP-1997;	97US-0058287P.	
XX	(CAMB-) CAMBIA BIOSYSTEMS LLC.		
XX	Kilian A, Bowtell D;		
XX	WPI; 1999-106060/09.		
DR	N-PSDB; AAX18279.		
XX	New isolated vertebrate telomerase genes - used to develop products for		
PT	treating cancers or for organ regeneration, nerve cell or brain cell		
PT	growth following injury or bone marrow transplantation.		
XX	Claim 4; Fig 11ak-al; 134pp; English.		
PS	This sequence is a truncated human telomerase of the invention. Primers		
XX	that amplify the telomerase coding sequence can be used in a method for		
CC	diagnosing cancer in a patient. The telomerase can be used for detection,		
CC	diagnosis and drug screening. Inhibitors of telomerase activity can be		
CC	used to treat cancers such as melanomas, other skin cancers,		
CC	neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,		
CC	lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin		
CC	growths. Enhancers of telomerase may be used to stimulate stem cell		
CC	proliferation and differentiation (expansion of haematopoietic stem cells		
CC	could be administered in the bone marrow transplant context). As well,		
CC	many tissues have stem cells. Proliferation of these cells may be useful		
CC	in wound healing, hair growth, treatment of disease such as Wilm's		
CC	tumour, organ regeneration or differentiation after injury or diseases,		
CC	nerve cell or brain cell growth following injury. Note: The N-terminus of		
CC	this sequence can be replaced by the sequences shown in AAY00656-Y00658		
XX	Sequence 936 AA;		
Qy	Query Match	82.6%;	Score 4923;
Db	Best Local Similarity	98.6%;	Pred. No. 0;
Qy	Matches	934;	Conservative 0; Mismatches 1; Indels 12; Gaps 1;
Db	1	MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAPRALVAOCLVCVPW	60
Qy	61	DARPPPAAPSFQVSCLELVARVLRQLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR	120
Db	61	DARPPPAAPSFQVSCLELVARVLRQLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR	120
Qy	121	SYLPNTVTDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180
Db	121	SYLPNTVTDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180
Qy	181	ATQARPPPHASGPRRRIGCERAWNHSVREAGVPLGLPAPGARRGGASRSLSPLPKRPRR	240
Db	181	ATQARPPPHASGPRRRIGCERAWNHSVREAGVPLGLPAPGARRGGASRSLSPLPKRPRR	240
Qy	241	GAAPEPERTVPGQSWAHPCRTGSDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG	300
Db	241	GAAPEPERTVPGQSWAHPCRTGSDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG	300
Qy	301	RQHAGPPSTSRPPRPMDTFCPPVYAEKHFLYSSGDKQLRPSFLSSLRPSLTGARRL	360
Db	301	RQHAGPPSTSRPPRPMDTFCPPVYAEKHFLYSSGDKQLRPSFLSSLRPSLTGARRL	360

Qy	361	VETIFLGRPMWPGT	PRRLPRLPQRYWQMRPLFLLELGNHAQCPYGVLLKTHCPRAAVT	420
Db	361	VETIFLGRPMWPGT	PRRLPRLPQRYWQMRPLFLLELGNHAQCPYGVLLKTHCPRAAVT	420
Qy	421	PAAGVCAREKPGQSVAAPEEEDT	DPRLVQLLRQHSFPWYGFVRACTRLRLVPPGLWGS	480
Db	421	PAAGVCAREKPGQSVAAPEEEDT	DPRLVQLLRQHSFPWYGFVRACTRLRLVPPGLWGS	480
Qy	481	RHNERRFLRNTKFI	SLGKHAKLSLQELTWKMSVRDCAWLRSPGVGCVPAAEHLRREEI	540
Db	481	RHNERRFLRNTKFI	SLGKHAKLSLQELTWKMSVRDCAWLRSPGVGCVPAAEHLRREEI	540
Qy	541	LAKFLHLMMSYVVVELLSRFFYVTTETTFQKNR	FFYRKSVMWSKLQSIGIROHLKRVQLRE	600
Db	541	LAKFLHLMMSYVVVELLSRFFYVTTETTFQKNR	FFYRKSVMWSKLQSIGIROHLKRVQLRE	600
Qy	601	LSEAEVRQHREARPAALTSRLRFPKPDGLRPI	VNMDDYVVGARTFRREKRAERLTSRVKA	660
Db	601	LSEAEVRQHREARPAALTSRLRFPKPDGLRPI	VNMDDYVVGARTFRREKRAERLTSRVKA	660
Qy	661	LFSVLNYERARRPGLLGASVLGDDIHRAWRT	FVLVRVRAODPPPELYFVKVDVTGAYDTI	720
Db	661	LFSVLNYERARRPGLLGASVLGDDIHRAWRT	FVLVRVRAODPPPELYFVKVDVTGAYDTI	720
Qy	721	PODLTEVIASIIKPNQTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL		780
Db	711	--DRLTEVIASIIKPNQTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL		768
Qy	781	QETSPLRDVAVIEQSSSLNEASSGLFDVFLRFMCHHAVIRIGKSYVQCQIGIPQGSILSTL		840
Db	769	QETSPLRDVAVIEQSSSLNEASSGLFDVFLRFMCHHAVIRIGKSYVQCQIGIPQGSILSTL		828
Qy	841	LCSLCYGD MENKLFAGIRRRDGLLRLVDDFLLVTPHLTHAKTFLRTLVRGVPEYGCVVNL		900
Db	829	LCSLCYGD MENKLFAGIRRRDGLLRLVDDFLLVTPHLTHAKTFLRTLVRGVPEYGCVVNL		888
Qy	901	RKTVMNPFVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSDYS		947
Db	889	RKTVMNPFVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSDYS		935
RESULT 47				
AAW61349				
ID	AAW61349 standard; protein; 949 AA.			
XX				
AC	AAW61349;			
XX				
DT	25-MAR-2003 (revised)			
DT	12-OCT-1998 (first entry)			
XX				
DE	Human telomerase protein 2 (TP2) partial polypeptide.			
XX				
KW	TP2; human; telomerase protein 2; cancer; AIDS; ageing; therapy.			
XX				
OS	Homo sapiens.			
XX				
Key	Location/Qualifiers			
FT	Protein	1..640	/note= "Claim 24"	
FT	Protein	1..563		
FT	Region	582..587	/note= "Claim 24"	
FT	Protein	640..940		
FT	Region	644..648	/note= "Claim 22"	
FT	Protein	696..953		
FT	Protein	696..940	/note= "Claim 24"	
FT	Region	852..857		
FT	Region	884..8894		
XX				

PN	WO9821343-A1.				
XX					
PD					
XX	22-MAY-1998.				
XX					
PF	13-NOV-1997;	97WO-US021248.			
XX					
PR	15-NOV-1996;	96US-00751189.			
PR	11-JUN-1997;	97US-00873039.			
PR	16-OCT-1997;	97US-00951733.			
XX					
PA	(AMGE-) AMGEN INC.				
PA	(AMGE-) AMGEN CANADA INC.				
XX					
PI	Harrington LA, Robinson MO;				
XX					
DR	WPI; 1998-297946/26.				
DR	N-PSDB; AAV27872.				
XX					
PT	New nucleic acid encoding human telomerase protein-2 - used for				
PT	regulating telomerase activity, e.g. for treating cancer or acquired				
PT	immune deficiency syndrome.				
XX					
PS	Claim id; Fig 6; 150pp; English.				
XX					
CC	This polypeptide comprises a large portion of human telomerase protein 2				
CC	(TP2), a novel protein of the telomerase complex. Its amino acid sequence				
CC	was deduced from partial cDNA clone 32 (see AAV27872), obtained from a				
CC	human colon tumour cell line LIM1863 cDNA. A full-length polypeptide				
CC	sequence (see AAW61350) is also disclosed. Expressing TP2 in a cell is				
CC	used to increase telomerase activity and thus proliferation for treatment				
CC	of e.g. HIV infection, AIDS and ageing disorders, while expressing an				
CC	inactive mutant of TP2 (or molecule antisense to the gene) is used to				
CC	decrease telomerase activity, e.g. for treatment of cancer. TP2				
CC	polypeptides can also be used to screen for agents that inhibit TP2				
CC	activity or its binding to TRIP1 (see AAW61347) or telomerase RNA,				
CC	potentially useful therapeutically, also to raise specific antibodies				
CC	useful in immunoassays and therapeutically as inhibitors. Also				
CC	contemplated are transgenic animals in which the TP2 gene has been				
CC	inactivated or is overexpressed. TP2 polypeptides are administered i.v.,				
CC	s.c. or orally, or they are delivered from engineered cells or gene				
CC	therapy vectors. (Updated on 25-MAR-2003 to correct PR field.)				
XX					
SQ	Sequence 949 AA;				
Query Match					
Best Local Similarity 82.2%; Score 4900; DB 2; Length 949;					
Matches 927; Conservative 0; Mismatches 0; Indels 0; Gaps 0;					
Qy	1	MPRAPRCRAVRSLRLSHYREVLP	PLATFVRRLGPQGWRLVQRGDPAAFRALVAQCLVCPW	60	
Db	23	MPRAPRCRAVRSLRLSHYREVLP	PLATFVRRLGPQGWRLVQRGDPAAFRALVAQCLVCPW	82	
Qy	61	DARPPAAPSPROVSCLELVARVLQ	RLCERGAKNVLAFGFALLDGA	GGPPEATTTSVR	120
Db	83	DARPPAAPSPROVSCLELVARVLQ	RLCERGAKNVLAFGFALLDGA	GGPPEATTTSVR	142
Qy	121	SYLPNTVTDALRGSGAWGLLLRR	VDDVLLHLLARCALFVLVAPSCAYQVCGPPLYQGA	180	
Db	143	SYLPNTVTDALRGSGAWGLLLRR	VDDVLLHLLARCALFVLVAPSCAYQVCGPPLYQGA	202	
Qy	181	ATQARPPPHASGPRRLGRCERAWN	HSVREAGVPLGLPAPGARRRGGSASRLPLPKRPRR	240	
Db	203	ATQARPPPHASGPRRLGRCERAWN	HSVREAGVPLGLPAPGARRRGGSASRLPLPKRPRR	262	
Qy	241	GAAPEPRTPVGQSWAHPGTRGPR	SDRGFCVVSPPARPAEATSELGALSGTRHSHPSVG	300	
Db	263	GAAPEPRTPVGQSWAHPGTRGPR	SDRGFCVVSPPARPAEATSELGALSGTRHSHPSVG	322	
Qy	301	ROHHAGPSTSRPRPMDTPCPPVY	AETKHFLYSSGDKQLRPSFLSSLRPSLTGARRL	360	
Db	323	ROHHAGPSTSRPRPMDTPCPPVY	AETKHFLYSSGDKQLRPSFLSSLRPSLTGARRL	382	
Qy	361	VETIFLGRPMWPGT	PRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT	420	

Db 383 VETIFLGSRRPMPGTPRRRLPRLPQRYWQMRPLFLELGNHAQCPYGVLLKTHCPLRAAVT 442
Qy 421 PAAGVCAREKPOGSAVAPEEEDTPRLVLQHQSSPQWQYGFVRACLRLRLLVPPGLWGS 480
Db 443 PAAGVCAREKPOGSAVAPEEEDTPRLVLQHQSSPQWQYGFVRACLRLRLLVPPGLWGS 502
Qy 481 RHNERPLRNTKFIISLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAABHRLREEI 540
Db 503 RHNERPLRNTKFIISLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAABHRLREEI 562
Qy 541 LAFLHLWMSVYVVELLSRFFYTETFOKNRLFFYRKSWKLSQSIGIRQHLKRVOLRE 600
Db 563 LAFLHLWMSVYVVELLSRFFYTETFOKNRLFFYRKSWKLSQSIGIRQHLKRVOLRE 622
Qy 601 LSAEVRQREARPAALITSRLRTPKPDGLRPIVNMDDYVVGARTFRREKRAELTSRVKA 660
Db 623 LSAEVRQREARPAALITSRLRTPKPDGLRPIVNMDDYVVGARTFRREKRAELTSRVKA 682
Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRVRAQDPPPELYFVKVDVTGAYDTI 720
Db 683 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRVRAQDPPPELYFVKVDVTGAYDTI 742
Qy 721 PQORLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLOPYMRQFVAHL 780
Db 743 PQORLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLOPYMRQFVAHL 802
Qy 781 QETSPURDVAVVIQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYQCGIPGSGTILSTL 840
Db 803 QETSPURDVAVVIQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYQCGIPGSGTILSTL 862
Qy 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRLTVRGVPEYGCVVNL 900
Db 863 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRLTVRGVPEYGCVVNL 922
Qy 901 RKTVMNFPVEDEALGGTAFVQMPAHGL 927
Db 923 RKTVMNFPVEDEALGGTAFVQMPAHGL 949

RESULT 48

ADG90609 ID ADG90609 standard; protein; 1152 AA.

XX AC ADG90609;

XX DT 25-MAR-2004 (first entry)

XX TT TERT consensus sequence SEQ ID NO:12.

DE immune response; telomerase reverse transcriptase; TERT; cytostatic;
KW immunostimulant; cancer; cytotoxic T cell response.

XX OS Unidentified.

XX PN WO2004002408-A2.

XX PD 08-JAN-2004.

XX PF 24-JUN-2003; 2003WO-US019844.

XX PR 27-JUN-2002; 2002US-0393295P.

XX PA (GERO-) GERON CORP.

XX PI Majumdar A, Ferber IA, Frolkis M, Wang Z;

XX DR WPI; 2004-071946/07.

XX PT Eliciting an immune response in a mammal specific for its own telomerase
PT reverse transcriptase (TERT), useful for treating or preventing cancer,
PT comprises administering a composition containing TERT of another
PT mammalian species.

XX Claim 10; SEQ ID NO 12; 44pp; English.
XX The invention relates to a novel method for eliciting an immune response
CC in a mammalian subject that is specific for its own telomerase reverse
CC transcripase (TERT), comprising administering an immunogenic composition
CC containing a protein with at least 20 consecutive amino acids of TERT of
CC another mammalian species, or a nucleic acid encoding the protein. A
CC composition of the invention has cytostatic, and immunostimulant
CC activity. The protein or the nucleic acid encoding the protein is useful
CC in the manufacture of a medicament for the treatment of cancer in a human
CC or for eliciting a cytotoxic T cell response in a human.

XX Sequence 1152 AA;

Query Match 75.7%; Score 4515; DB 8; Length 1152;

Best Local Similarity 76.4%; Pred. No. 0;

Matches 880; Conservative 87; Mismatches 165; Indels 20; Gaps 6;

Qy 1 MPRAPRCRAVRSLRSHYREVLPATFVRRRLPGQWRLVQRGDPAAFRALVAQCLVCVPW 60

Db 1 MPRAPRCRAVRALLRSHYREVLPATFVRRRLPGQWRLVQRGDPAAFRALVAQCLVCVPW 60

Qy 61 DARPPPAASFRQVSCCLKELVARVQLRCERGAKNVLAFGFALLDGARGGPPPAFTTSVR 120

Db 61 GARPPPAAPSFHQVSSCLKELVARVQQLCERGERNVLAFGFALLDGARGGPPMAFTTSVR 120

Qy 121 SVLPNTVTDALSGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQCGPPLVOLGA 180

Db 121 SVLPNTVTTLGGSGAWGLLRRVGGDVLVHLLARCALYLLVAPSCAYQCGPPLVOIGA 180

Qy 181 ATQARPPPHASG-PRRLG-----CERANWHSVREAGVPLGLPAPGARRGGGSASRS 231

Db 181 TTQARPPPHASGPRRPVGRNFTNLGFCERANWHSVREAGVPLGLSPGAKRGGGSASRS 240

Qy 232 LPLPKRRGAAPERTPTVQGSWAHPQRTGPGSDRGFCVQSPAPABEATSLEGALSQ 291

Db 241 LPLPKARRGAAPERTPTVQGSWTPSGRTRVPSDAGSPVPSPARPABEDLSKKGKVD 300

Qy 292 TRHSHPVGRQHHAGPSTSRPPRWDTPCPPVYAEKHFLYSSGKQOLRPSFLSSLR 351

Db 301 LSLSGVCCCHKPSSPPSLSSPPRPNAFOLRPVYAEKHFLYSSGGRERLRPSFLSLNLQ 360

Qy 352 PSLTGARRLVETIFLGSRRPMPGTPRRRLPRLPORYWQMRPLFLELGNHAQCPYGVLLKT 411

Db 361 PSLTGARRLVETIFLGSRRPMTSGPLCETHLSRRYWQMRPLFQELLGHNARCPYVLLRS 420

Qy 412 HCPLRAAVTPAAGVCAREKPOGSAVAPEE-----EDTDPRLVQLLRQHSPPQVYGFVR 466

Db 421 HCPLRAAATFVAGALNTSPQGSVAAPPEVAAPQEQTSTRLMQLLRQHSPPQVYGFVR 480

Qy 467 ACLRLVPPGLWGSRHNERFLRNTKFIISLGKHAKLSLOELTWKMSVRDCAWLRRSPGV 526

Db 481 ACLCLVPPGLWGSRHNERFLKNVKKFISLGKHAKLSLOELTWKMKVDCAWLRRSPGY 540

Qy 527 GCVPAAEHRLREEILAK---FLHLMMSVYVVELLSRFFYVTTTFOKNRLFFYRKSWKSWK 583

Db 541 ESVPAAEHRLRERILLAKEHPFLFWMMSVYVVELLSRFFYITESTFOKNRLFFYRKSWKSWK 600

Qy 584 LOSIGIRQHLKRVQLRELSEAEVRQHRREARPAALTSRLRFPFKPDGLRPIVNMDDYVVGAR 643

Db 601 LOSIGVRQHLRVLRELSEAEVRQHQEAWPAMPICRLRFIPKPNGLRPIVNNYSYMGTR 660

Qy 644 TFRREKRAELTSRVKALFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRVRAQDPP 703

Db 661 AFRERRQAQHF*QRLKTLFSLNRYERTKPHLLGASVLGMDIYRTWRTFVLVRVRAQDPP 720

Qy 704 PELYFVKVDVTGAYDTIPQORLTEVIASIIK-PONTYCVRRYAVVQKAAHGHVRKAFKSH 762

Db 721 PRMYFVKVDVTGAYDAIPQDKLVEJANMIRISESTYCIQYAVVQDQAGQVHKSFRRQ 780

Qy 763 VSTLTDLOPYMRQFVAHLQET--SPLRDVAVIEQSSSLNEASSGLFDVFLRFMCHHAVRI 820

Db 781 VSTLSLQPMQGFKLHQLQSDASALRNSVVIEQISLNEASSLSLDFLFLRLHSHSVKI 840
Qy 821 RGKSYVOCQIGPOGSIILSTLCSLCYGDMEKLFAGIRRRGLLRLVDDFLVTPHLLTHA 880
Db 841 GRCYVOCQIGPOGSIILSTLCSLCYGDMEKLFAGIRRRGLLRLVDDFLVTPHLLTHA 900
Qy 881 KTFRLTLVRGVEPYGCVNLRKTVNFPVDEALGGTAFVQMPAHGLFPWCGLLDTRL 940
Db 901 KTFRLTLVRGVEPYGCVNLRKTVNFPVDEALGGTAFVQMPAHGLFPWCGLLDTRL 960
Qy 941 EVQSDYSYARTSIRASLTNRGPKAGNNRRKLFVLRKCHSLFLDLQVNSLQVCTN 1000
Db 961 EVFCDYSYARTSIRASLTNRGPKAGNNRRKLFVLRKCHSLFLDLQVNSLQVCTN 1020
Qy 1001 IYKILLQAYREHACVLOLEPHQOVKNPTFELRVISDTASLCYSILKAKNAGMSLGAKG 1060
Db 1021 IYKILLQAYREHACVLOLEPHQOVKNPTFELRVISDTASLCYSILKAKNAGMSLGAKG 1080
Qy 1061 AAGFPLSEAVQWLCHQAFLLKLRHVVYVPLLGSLRTAQQLSRKLPGLTALAAAN 1120
Db 1081 AAGFPLSEAVQWLCHQAFLLKLRHVVYVPLLGSLRTAQQLSRKLPGLTALAAAN 1140
Qy 1121 PALPSDKTILD 1132
Db 1141 PALSTDFTILD 1152

RESULT 49
AAW46997
ID AAW46997 standard; protein; 807 AA.
XX AAW46997;
AC AAW46997;
XX AAW46997;
XX AAW46997;
DT 13-AUG-1998 (first entry)
XX Human telomerase reverse transcriptase Delta182 variant.
DE Human telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
XX Synthetic.
OS Homo sapiens.
XX GB2317891-A.
PN 08-APR-1998.
XX 01-OCT-1997; 97GB-00020890.
XX 01-OCT-1997; 96US-00724643.
PR 18-APR-1997; 97US-00844419.
PR 25-APR-1997; 97US-00846017.
PR 06-MAY-1997; 97US-00851843.
PR 09-MAY-1997; 97US-00854050.
PR 14-AUG-1997; 97US-00911312.
PR 14-AUG-1997; 97US-00912951.
PR 14-AUG-1997; 97US-00915503.
XX (GERO-) GERON CORP.
PA (UYTE-) UNIV TECHNOLOGY CORP.
XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
PI Andrews WH;
XX WPI: 1998-171633/16.
DR N-PSDB; AA22382.
XX Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.
PS Disclosure; Fig 20; 387pp; English.
XX

CC The present sequence represents a human telomerase reverse transcriptase
CC (hTERT) variant from the present invention. The present invention also
CC describes the following methods: (A) determining whether a test compound
CC is a modulator of hTERT, by detecting the change in hTERT recombinant
CC protein or polynucleotide, on administration of the compound; (B)
CC preparation of recombinant telomerase by contacting a protein preparation
CC of hTERT with a telomerase RNA component; (C) detection of the hTERT RNA or
CC protein in a sample by binding a relevant probe to the sample and
CC detecting the complex formed or in the case of RNA detection, amplifying
CC the product and correlating the presence of complex or amplification
CC product with presence of hTERT in the sample; and (D) increasing the
CC proliferation of a vertebrate cell by increasing hTERT expression; and (E)
CC the use of an agent that causes an increase in cell vertebrate cell
CC proliferation to create a medicament that inhibits ageing. A protein
CC preparation of hTERT and the polynucleotide encoding hTERT can be used in
CC the manufacture of medicaments for inhibiting the effect of ageing or
CC cancer. Inhibitors of telomerase activity can be used to treat conditions
CC that are associated with high telomerase activity. A protein preparation
CC of hTERT can also be used in the new methods
XX
SQ Sequence 807 AA;
Query Match 68.0%; Score 4052; DB 2; Length 807;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 763; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSLLSHYREVLPATFVRRRLGPGQWRLVQRGDPAAFRALVAQCVCVPM 60
DB 1 MPRAPRCRAVRSLLSHYREVLPATFVRRRLGPGQWRLVQRGDPAAFRALVAQCVCVPM 60
QY 61 DARPPPAAPSPQVSCLEKELVARVLQRCERGAKNVLPAGFALLDGGGPEAETTSVR 120
DB 61 DARPPPAAPSPQVSCLEKELVARVLQRCERGAKNVLPAGFALLDGGGPEAETTSVR 120
QY 121 SYLNTVTDALRGSGANGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
DB 121 SYLNTVTDALRGSGANGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
QY 181 ATQARPPPHASGPRRLGRCERAWNHSVREAGVPLGAPGARRRGGSASRLPLPKRRR 240
DB 181 ATQARPPPHASGPRRLGRCERAWNHSVREAGVPLGAPGARRRGGSASRLPLPKRRR 240
QY 241 GAAPEPRTVPGQSWAHPGTRGSDRGFCVSPARAEATSLGALSGTRHSHPSVG 300
DB 241 GAAPEPRTVPGQSWAHPGTRGSDRGFCVSPARAEATSLGALSGTRHSHPSVG 300
QY 301 RQHAGPSTSRPRPMDTPCPVYAEATKFLYSSGDKQLRPSFLLSRLPSLTGARRL 360
DB 301 RQHAGPSTSRPRPMDTPCPVYAEATKFLYSSGDKQLRPSFLLSRLPSLTGARRL 360
QY 361 VETIFLGSRPWMPGTTPRLPRLPQRYWQMRPLFLELGNHACQPYGVLLKTHCPRAAVT 420
DB 361 VETIFLGSRPWMPGTTPRLPRLPQRYWQMRPLFLELGNHACQPYGVLLKTHCPRAAVT 420
QY 421 PAAGVCAREKPGQSWAPEEEDTDPRLVQLLRHSSPWQYGVFRACLRRLVPPGLWGS 480
DB 421 PAAGVCAREKPGQSWAPEEEDTDPRLVQLLRHSSPWQYGVFRACLRRLVPPGLWGS 480
QY 481 RHNERRFLRNTKTFISLGKHAHLSLQELTWQMSVRDCAWLRRSPGVGCPAAEHLRBEI 540
DB 481 RHNERRFLRNTKTFISLGKHAHLSLQELTWQMSVRDCAWLRRSPGVGCPAAEHLRBEI 540
QY 541 LAKFLHLMSSVYVVELLSRFFYVTTFTFQKRLFFYKSVWSKLSQSGIRHKLKRVQURE 600
DB 541 LAKFLHLMSSVYVVELLSRFFYVTTFTFQKRLFFYKSVWSKLSQSGIRHKLKRVQURE 600
QY 601 LSEAEVRQREARPAALLTSRLRFIPKPDGLRPIVMDYVVGARTFRREKRAERTLSRVA 660
DB 601 LSEAEVRQREARPAALLTSRLRFIPKPDGLRPIVMDYVVGARTFRREKRAERTLSRVA 660
QY 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720

XX 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX (CAMP-) CAMBIA BIOSYSTEMS LLC.
XX
XX Kilian A, Bowtell D;
XX WPI; 1999-106060/09.
DR N-PSDB; AAX18274.
XX
XX New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX
XX Claim 4; Fig 11x-y; 134pp; English.
XX
XX This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The N-terminus of
CC this sequence can be replaced by the sequences shown in AAY0656-Y0658
XX
XX Sequence 807 AA;

Query Match 68.0%; Score 4052; DB 2; Length 807;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 763; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPAPRCRAVRSLLRSHYREVLPATFVRRRLGQGWRLVQRGDPAAFRALVAQCLVCVPW 60
DB 1 MPAPRCRAVRSLLRSHYREVLPATFVRRRLGQGWRLVQRGDPAAFRALVAQCLVCVPW 60
QY 61 DARPPPAASFROVSCLEKELVARVLOLCEGAKNVLAFGFALLDGCARGGPEAFTTSVR 120
DB 61 DARPPPAASFROVSCLEKELVARVLOLCEGAKNVLAFGFALLDGCARGGPEAFTTSVR 120
QY 121 SYLPNTVTDALRGSGAWGLLRRVGGDDVLVHLLARCAFLVAPSCAYQVCGPPPLYQLGA 180
DB 121 SYLPNTVTDALRGSGAWGLLRRVGGDDVLVHLLARCAFLVAPSCAYQVCGPPPLYQLGA 180
QY 181 ATQARPPPHASGRRRLGGERAWNHSVRAGVPLGLPAGARRRGSGASRSLPLPKRRR 240
DB 181 ATQARPPPHASGRRRLGGERAWNHSVRAGVPLGLPAGARRRGSGASRSLPLPKRRR 240
QY 241 GAAPERTPVGGSWAHGPRTRGSDRGFCVVSPPARPAEATSLGALSCTHSHPSVG 300
DB 241 GAAPERTPVGGSWAHGPRTRGSDRGFCVVSPPARPAEATSLGALSCTHSHPSVG 300
QY 301 RQHAGFPSTPRPPRWDTPCPVVAETHFLYSSGDKQLRPSFLLSLRSLTGARRL 360
DB 301 RQHAGFPSTPRPPRWDTPCPVVAETHFLYSSGDKQLRPSFLLSLRSLTGARRL 360
QY 361 VETIFLGSPPWPGTPRRRLPRLPQRYQWQMRPLFLELLGNHACQPYGVLLKTHCPRAAVT 420
DB 361 VETIFLGSPPWPGTPRRRLPRLPQRYQWQMRPLFLELLGNHACQPYGVLLKTHCPRAAVT 420
QY 421 PAAGVCAREKPGGSVAAPPEEDTDPRRLVOLLAROHSSPMOVYGFVYACLRLLVPPGLWGS 480
DB 421 PAAGVCAREKPGGSVAAPPEEDTDPRRLVOLLAROHSSPMOVYGFVYACLRLLVPPGLWGS 480

QY 481 RHNERFLRNTKFFISLGHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREI 540
DB 481 RHNERFLRNTKFFISLGHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREI 540
QY 541 LAKFLHMLMSVVVVELLSRFFVYVTTTFOKNRLFYFRKSVWSKLSQSIGIRQHLKRVQLRE 600
DB 541 LAKFLHMLMSVVVVELLSRFFVYVTTTFOKNRLFYFRKSVWSKLSQSIGIRQHLKRVQLRE 600
QY 601 LSEAEVROHREARPALLTSRLRPIPKPDGLRDIIVMDYVVGARTFRREKGAERLTSRVKA 660
DB 601 LSEAEVROHREARPALLTSRLRPIPKPDGLRDIIVMDYVVGARTFRREKGAERLTSRVKA 660
QY 661 LFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLVRQAQDPPPELYFVKVDVGTGAYDTI 720
DB 661 LFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLVRQAQDPPPELYFVKVDVGTGAYDTI 720
QY 721 PODRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHV 763
DB 721 PODRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHV 763
RESULT 52
ADD21416
ID ADD21416 standard; protein; 1128 AA.
XX AC ADD21416;
XX DT 15-JAN-2004 (first entry)
XX Golden hamster TERT protein related to continual cell growth.
XX continual growth; cultured cell; cyclin dependent kinase; cdk4; cdk2;
XX cdk6; activating mutation; cell growth; cell division; cell cycle;
XX cancer-causing agent; continual growth-induced cell; enzyme; TERT;
XX telomerase; Golden hamster.
XX Mesocricetus auratus.
XX WO2003044169-A2.
XX 30-MAY-2003.
XX 15-NOV-2002; 2002WO-US036729.
XX 15-NOV-2001; 2001US-0334760P.
XX (UTEM) UNIV TEMPLE.
XX Reddy PE, Rane SG, Mettuss RV;
XX WPI; 2003-449813/42.
XX
XX A composition for reversibly inducing continual growth in normal cells
XX comprises a cyclin dependent kinase protein (e.g. cdk4, cdk2 or cdk6) or
XX its active fragment, derivative, homolog or analog, having an activating
XX mutation.
XX Disclosure; Page 119-121; 77pp; English.
XX
XX This invention relates to a novel composition for inducing a reversible
XX state of a continual growth in cultured cells and comprises at least one
XX compound comprising a cyclin dependent kinase (cdk)4, cdk2 or cdk6
XX protein having an activating mutation. Growth and division of living
XX cells involve a regular series of events and processes that comprise the
XX cell cycle. Cyclin dependent kinases cdk2, cdk4 and cdk6 are involved in
XX the control of G1, the point at which cells irrevocably commit to DNA
XX synthesis and thus enter the cell cycle. The invention is useful in
XX reversibly inducing continual growth in normal cells and may allow the
XX screening of cancer-causing agents with the continual growth-induced
XX cells. The present sequence is that of the golden hamster TERT protein,
XX the catalytic subunit of telomerase, related to the invention. Note: Due
XX to an error in the specification or sequence listing, the Seq ID numbers

CC given in the disclosure do not correspond to those given in the sequence
CC listing. It is therefore unclear which seq ID number corresponds to which
CC sequence and exactly which sequence is being claimed.

Sequence 1128 AA:

Query Match	60.9%;	Score 3628;	DB 7;	Length 1128;
Best local Similarity	63.3%;	Pred. No. 9.8e-236;		
Matches 736;	Conservative 124;	Mismatches 238;	Indels 64;	Gaps 16;
QY	1	MPRAPRCRAVRSLRSHVREVLPLATFVRRLLPGQWRLVQDGDPAAFRALVAQCLVCVPW	60	
DB	1	MPRAPRCRAVRALLRSQYRWPLATFVRRLLPGEGRLVQDQPKVFTLVARCLVCVPW	60	
QY	61	DARPPPAAPFRQVSCILKELVARVLQRLCERGAKNVLAFGPFALLDGGARGPPPEAFTTSVR	120	
DB	61	DSQPPPADLSFHQVSSLKELVARVVQRLCERGERNVLTFGFALLNGAQQGPPPMFTTSVR	120	
QY	121	SYLPNTVTDALRGSGANGLLRVCGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYOLGA	180	
DB	121	SYLPNSVTESLRVSGAWMLLNRVCGDDLLVYLARCALYLLVPPSCAYQVCGSELYQICA	180	
QY	181	ATQARPP-PHASGPRRLG-----CERAWNHSVREAGVPLGLPAGPARRRGSSASRS	231	
DB	181	TAETWPSVSIYRTRPVGRNFTHLGSFTHRVNSSHQEAWKPPPLPSREAKRSLSITNRS	240	
QY	232	LPUPKPRRRGAAPERTPVQGGSWAHPRGTRGSDRGFCVVSAPR---PAEAEATSLGEG	287	
DB	241	VPPSKARCDLAPRLKGPYRQA-----VPTFSDKTW-VPNPAKSHAVPISRTTK-ED	291	
QY	288	ALSGTRSHSPSVGRQ---HHAGPPSTS-RPP-----RPWDTPCPVVAETKHFLYS	334	
DB	292	LSSGVK--APGLSRSGVCYKHKPSSTSLOSPLCONAFQLRP-----YTETKRELYS	341	
QY	335	-SGDKEQLRPSFLISSLRPSLTGARRLVEITFLGSRPMPGTPRRRLPRLPORVQWMPPLF	393	
DB	342	REGGRRLNPSFLNNLQPSLTGARRLVEILFLGMRPRTSGPLCGRRRLSKRYWQMPPLF	401	
QY	394	LELLGNHAQCPYGVLLKTHCPLRAAVTPAGVCAREKPGQGSVAAPAEEDTDPRRLVOLLR	453	
DB	402	QQLLVNHARCPCYVRLLRSHCRFTAAHQVAGAL-----NTTSPQRLMNLRL	447	
QY	454	QHSSPMQVQYGFVRACLRLRYPGLGWSGRHNERRFLRNTKKFISLGKHAKLSQLBLTWKMS	513	
DB	448	LHSSPMQVQYGLQACVCKLVPPLGLWSGRHNQRREFKNVKRFISLGKTKLKLSQLBLTWKMK	507	
QY	514	VRDCAWLRSPFGVGCVPAAEHRLEETIAKFLHMLMSVYVVELLSRFFYVTTTFQKNRL	573	
DB	508	VQDCRWLRSPGNNCVPAAEHRTREIRILAVFLFWLMDAYVVELLSRFFYVTTTFQKNRL	567	
QY	574	FFYRKSVMKLSQIGIRQHLKRVQLRELSEAEVTRQHREARPALLTSLRITIPKPDGLRPI	633	
DB	568	FFYRKSVMRLQSIGVRHHLERVLRLQSQEBVRQOEAWPAMPICRLRITIPKPSGLRPI	627	
QY	634	VNMDYVVGARTFRRKKAERLTSRVKALFSLVNYERARRPGLLGASVLGLDDTHRAWRTF	693	
DB	628	VNMSY-MGTAFKQKQAQHTQCLKTLFSLVNYELTKHYNLLGASVLGLNDIYRTWRTF	686	
QY	694	VLVRADQPPPELYFVKVDVTGAYDTTIPQDLRLTEVIASIIK-PONTYCVRRYAVVQKAAH	752	
DB	687	VLVRVRLDPAPMYFVKADVTGAYDAIPQDKLVEVIANMRHPDNSYCIHQYAVVQDRQ	746	
QY	753	GHVRKAFKSHVSTLTDLPYWRQFAHLO--ETSPLRDAVVEQSSSLNEASSGLFDVFL	810	
DB	747	GQTHKSFRRQVSTLSDIQLPHMGQFLKHLQSDFTSALENSVVIQSLNEASSSLPDFFL	806	
QY	811	RFMCHHAVIRGKSYVOCGIPQGSILSTLLCSLCYGDMMENKLPAGIRDGLLRLVDDF	870	
DB	807	RFVNSVVKIGRCYVOCGIPQGSILSTLLCSLCFGDMMENKLPFAEQDGLLRLRVDDF	866	
QY	871	LLVTPHLLTHAKTLFRLTVRGVPEYGCVVNLRKTVNPFVEDEALGGTAFVQMPAHLFPW	930	
DB	867	LLVTPHLLVQAEAFRLALVRGIPGYCGMINLQKTVNPFVDAAGTLDGTAPHOLPAHLCPFW	926	

Db 1 MPRAPRCRAVALLRSYQVQWVPLATFVRRLGPEGRQLVQVDPDKVFTLVARCLVCVPW 60
Qy 61 DARPPAPSPROVSCUKELVARVLQRLCERGAQNVLAFGALLDARGGPPPAFTTSVR 120
Db 61 DSQPPPADLSFHQVSSKELVARVVQLCERGERNVLTGFGALLNGAQQGPPMTFTTSVR 120
Qy 121 SYLPTNTVDALRGSGAGLLRLRVGDDVVLVHLLARCALFVLVAPSCAYVCGPPLVQLGA 180
Db 121 SYLPSNVTESLRVSGAMWLLNLRVGGDDLLVYLLARCALYLLVPPSCAYVCGSFLVQICA 180
Qy 181 ATQARPP- PHASGPRRLG-----CERAWNHSVREAGVPLGLPAPGARRRGGSASRS 231
Db 181 TAETWPSVSRIRYRTPRGVNFTHLGSTHVRNSSHQEAWKPPPLPSREAKRSLSITNRS 240
Qy 232 LPLPKRRRGAAPERTPVCGQSWAHPGTRGPSDRGFCVVSAPAR-----PAREATSLEG 287
Db 241 VPSKAKARCDLAPLEKGPVQA-----VPTPSDKTW-VNPAKSHAVFSIRTK-ED 291
Qy 288 ALGSTRHSPSVGRQ-----HHAGPPSTS-RPP-----RPWDTPCPPVYAETKHFLYS 334
Db 292 LSSGVK--APGLSRSGVCVKHSPSTSLQSPLCQNAFLRP-----YTETKFLYS 341
Qy 335 -SGDKEQLRFSFLLSSLRPSLTGARLVETIFLGSRRPMPGTPRRLPRLPQVWQRPPLF 393
Db 342 REGGRELRNPSFLNNLQPSLTGARLVETIFLGMRPRTSGPLCGRRRLSKRYWQRPPLF 401
Qy 394 LELLGNHAQCPYGVLLKTHCPRAAVTPAAGVCAREKPGQSVAAPEEEDTDPRLVQLAR 453
Db 402 QQLLVNHARCPYVLLRASHCRFTAHOVAGAL-----NTTSPORLNNLLR 447
Qy 454 QHSSPQVYGVFRACLRRLVPPGLWGSRRHNERFLRNTKFKISLGHKAKLSLQELTWKMS 513
Db 448 LHSSPQVYGFLOACVGLVPPGLWGSRRHNERFFKNVKEFISLGYDKLSLQELTWKWK 507
Qy 514 VRDCAMLRRSPGVCVPAARHREBELAKPLHLMWSVYVVELLRFFVYVTTTFPOKNRL 573
Db 508 VQDCRMLRRSPGNNCPAAEHRTREIRLAVLFELMDAYVVELLRFFVYVTTTFPOKNRL 567
Qy 574 FFYKRSVWSKLSQIGIRQHLKRYQLRELGEAEVROHREARPAALLTSRLRFIPKDGRLPI 633
Db 568 FFYKRSWNRLOIGVRRHLERVLQELSGEEVROQEAWPAMPICLRLRFPKPSGLRPI 627
Qy 634 VMDYVVGARTFRREKRAERLTSRVKALFSLVLYERARRPGLIGASVLGLDDIHRAWRTF 693
Db 628 VNMSY-MGTRAFDKGQAQHTQCLKTLFSLVNYELTKHTNLLGASVLGLNDIYRTWTF 686
Qy 694 VLRVRAQDPPPELYFVKVDVTGAYDTIPODRLTEVIASLIK-PONTYCYVRRVAVQKAAH 752
Db 687 VLRVRLDPAPRFYFKADVGTGAYDAIPQDKLVEVIANNIRHPDINSYCIHQVAVVQRDRQ 746
Qy 753 GHVRKAFKSHVSTLTLQPMYRQFVAHLQ--ETSPLRDAVIEQSSLSNEASGLFDVFL 810
Db 747 GQIHKSFRQVSTLSDLPQHMGOFLXHLQSDTSALRNSVIEQSLNEASSLSFDFFL 806
Qy 811 RPNCHAVIRIKSYVQCGIPIGOSTLSTLLCSLCYGDMMENKLFAGIRRDGLLLRLVDVF 870
Db 807 RFVRNSVWVIGRGYVQCGIPIGOSTLSTLLCSLCFCGDMENKLFVAVQDGLLLRFDVDF 866
Qy 871 LLVTPHLTHAKTFLRTLVRGVEYGVNLRKTVNFPVEDALGGTAFVQVPAHGLFPW 930
Db 867 LLVTPHLVQAEFLRALVGIPEYGCWMLQKTVNFPVDAGTLDGTAPHQLPAHCLFPW 926
Qy 931 CGLLDTRTLEVDOSYSYARTSIRASLTFRNGFKAGRNMRKLFGLRLKCHSLFLDLQ 990
Db 927 CGLLDTRTLEVDOSYSYARTSIRASLTFRNGFKAGRNMRKLFGLRLKCHSLFLDLQ 986
Qy 991 VNSLQTVCTNIIKILLQAYRPHACVQLQPFHQVQVWKNPTFFLRVISDTASLCYSILKAK 1050
Db 987 MNSLQTVCTNIVKIFILLQAYRPHACALQLPFDQHVVRKNPAFFLSIISNIASCYSILKVK 1046
Qy 1051 NAGMSLGAKGAGPLPSEAVOMLCHQAFLLKLTTRHRTVVVPLLSIRTAQOTLSKLPST 1110
Db 1047 NAGMTLKAKGASGSPPEARWLCYQAFLLKLAGHSVYKCLGLPLRTAQKQCRKLPR 1106

Qy 1111 TLTALAAANPALPSDFKTILD 1132
Db 1107 TMAILETAADPALSTDFQILD 1128
RESULT 54
AY26579
ID AAY26579 standard; protein; 1122 AA.
XX
AC AAY26579;
XX
DT 13-SEP-1999 (first entry)
XX
DE Murine telomerase reverse transcriptase (mTERT) enzyme.
XX
KW Telomerase reverse transcriptase; TERT; mouse; telomere length assay;
XX
OS immunogen; enzyme; telomerase-mediated DNA replication.
XX
PN Mus sp.
XX
PD WO9927113-Al.
XX
PP 03-JUN-1999.
XX
PR 25-NOV-1998; 98WO-US025211.
XX
PR 26-NOV-1997; 97US-00979742.
XX
PR 16-MAR-1998; 98US-00042460.
XX
PA (GERO-) GERON CORP.
XX
PA (YESH) UNIV YESHIVA EINSTEIN COLLEGE.
XX
PI Morin GB, Allsopp R, Depinho R, Greenberg R;
XX
DR WPI; 1999-347722/29.
XX
DR N-PSDB; AAX80994.
XX
PS Mouse telomerase reverse transcriptase (mTERT) enzyme proteins and
XX
PS Claim 8; Fig 2; 135pp; English.
XX
CC The invention relates to a mouse telomerase reverse transcriptase (mTERT)
XX
CC enzyme. Compositions containing mTERT can be used in telomere length
XX
CC assays. Isolated mTERT is useful as an immunogen for the production of
XX
CC monoclonal or polyclonal antibodies. The method is useful for assessing
XX
CC the degree of purification and identification of new mTERT species, such
XX
CC as an mTERT allele, homolog or isoform, or to screen for modulators
XX
CC (antagonists and agonists) of telomerase-mediated DNA replication.
XX
CC Antagonists and agonists of mTERT can be used to modify the activity of
XX
CC other telomerase enzymes such as human TERT (hTERT). The present sequence
XX
XX represents a mTERT enzyme
XX
SQ Sequence 1122 AA;
Query Match 58.8%; Score 3505; DB 2; Length 1122;
Best Local Similarity 62.4%; Pred. No. 2.2e-285;
Matches 719; Conservative 122; Mismatches 260; Indels 52; Gaps 13;
Qy 1 MPRAPRCRAVALLRSYRVEVLPLATFVRRLGPGQWRLVQGRDPAAPRALVAQCLVCVPW 60
Db 1 MTRAPRCVAVSLRLSRYSREVWPLATFVRRLGPGGRRLVQGDPKIVRTLVQCLVCVHW 60
Qy 61 DARPPAPSPROVSCUKELVARVLQRLCERGAQNVLAFGALLDARGGPPPAFTTSVR 120
Db 61 DSQPPPADLSFHQVSSKELVARVVQLCERGERNVLTGFGALLNGAQQGPPMTFTTSVR 120
Qy 121 SYLPTNTVDALRGSGAGLLRLRVGDDVVLVHLLARCALFVLVAPSCAYVCGPPLVQLGA 180
Db 121 SYLPTNTVIELRVSGAMWLLNLRVGGDDLLVYLLARCALYLLVPPSCAYVCGSFLVQICA 180
Qy 181 ATQARPPPHAS-GPRRLG-----CERAWNHSVREAGVPLGLPAPGARRRGGSASRS 231

Db 181 TTDIWPVSASYPTRPVGRNFTNLRFLQOIKSSSRQEAAPKPLALPSRGTKRHLSTSTS 240
Qy 232 LPLPKRRRGAAPERTPVQGSWAHPGTRGSDRGFCVVSAPAR-----PAEEATSLE 286
Db 241 VPSAKKARCVPRVEEGP-----HRQVLPFPGSKW-VPSPARSPVPTAEKDLSSK 292
Qy 287 GALSCTRHSHPSVGRQHAGPPSTSPRPMDTCCPPVYAETKHLYSSGD-KEQLRPSF 345
Db 293 GKVSLSLS-GSVCKKPSSTLSLSPRQNAFLRP-FIETRHFLYSRGDGERLNPSF 350
Qy 346 LLSSLRSLTGARRLVETIFLGSWAHPGTRGSDRGFCVVSAPAR-----PAEEATSLE 405
Db 351 LLNLQPNLTGARRLVETIFLGSWAHPGTRGSDRGFCVVSAPAR-----PAEEATSLE 410
Qy 406 GVLLKTHCPLEAA---VTPAAGVCAREKPGQSVAAPEEDTDPRLLVOLLROHSSPMQVY 462
Db 411 VLLLRSHCRFTANQVTDAL-----NTSPHMLDMLRLHSSPMQVY 452
Qy 463 GFVRACURRLVPPGLWGSRRNRRFLNTKKFISLGHAKLSLQELTWKMSVRDCAWLR 522
Db 453 GFRLACLVKVSASLWGTNRNRRFFKNLKKFISLGHAKLSLQELTWKMSVRDCAWLR 512
Qy 523 SPGVGCVPAAEHRLREILAKFLHLMMSVYVVELLRSEFFVTTTQKNRLLPFYRKSVMS 582
Db 513 SPGKDRVPAAAEHRLREILAKFLHLMMSVYVVELLRSEFFVTTTQKNRLLPFYRKSVMS 572
Qy 583 KLSIGIRHQLKRVOLRELSAEVROHREARPAALLTSRLRFIPKPDGLRPIVNMVYVGA 642
Db 573 KLSIGIRHQLKRVOLRELSAEVROHREARPAALLTSRLRFIPKPDGLRPIVNMVYVGA 632
Qy 643 RTFRREKRAELTSRVKALFSVLNYERARRPGLIGASVLGDDIHRARWTFVLVRQAQP 702
Db 633 RALGRRKQAQHFQRLKTLFSLMNYERTKPHLWGSVSLGNDIYRTWRAFLVRALDQ 692
Qy 703 PPELYFVKVDVTGAYDTPIDRLTEVJASIK-PONTYCVRRVAVVQKAHGHVRKAFKS 761
Db 693 TPRIYFVKVDVTGAYDTPIDRLTEVJASIK-PONTYCVRRVAVVQKAHGHVRKAFKS 752
Qy 762 HVSTLTDLQPMQGFVAHLOET--SPLRDAVVIQSSSLNEASSGLFDVFLRWCCHAVR 819
Db 753 QVITLSDLQPMQGFVAHLOET--SPLRDAVVIQSSSLNEASSGLFDVFLRWCCHAVR 812
Qy 820 IRGKSVYQCQGIPOGSSITLLCSLCYGMENKLFAGIRRDGLLRLVDDFLVATVHLTH 879
Db 813 IGRCYTQCQGIPOGSSITLLCSLCYGMENKLFAGIRRDGLLRLVDDFLVATVHLTH 872
Qy 880 AKTFLRLVRGPEYGVGNLRTVNNPVEDEALGTAQVQMPAHGLFPWCGLLLDTRT 939
Db 873 AKTFLRLVRGPEYGVGNLRTVNNPVEDEALGTAQVQMPAHGLFPWCGLLLDTRT 932
Qy 940 LEVQSDYSSVARTSIRASLTFNRRGFKAGRNRRKLFGLVRLKCHSLFLDLQVNSLOTVCT 999
Db 933 LEVQSDYSSVARTSIRASLTFNRRGFKAGRNRRKLFGLVRLKCHSLFLDLQVNSLOTVCT 992
Qy 1000 NIYKILLQAYRHACVQLQPFHQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAK 1059
Db 993 NIYKILLQAYRHACVQLQPFHQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAK 1052
Qy 1060 GAGKPLPSEAVQMLCHQAFILKLTTRHRTVYVPLLSRLTAQTLRKPLPTTITALEAAA 1119
Db 1053 GS---FPPEAAHWLCYQAFLLKLAASHVYKCLLGLPLRTAQKLLCRKLPEATWTILKAAA 1109
Qy 1120 NPALPSDFKTILD 1132
Db 1110 DPALSTDFQTILD 1122

RESULT 55
ADG90601 standard; protein; 1122 AA.
XX
AC ADG90601;

XX 25-MAR-2004 (first entry)
XX Murine TERT SEQ ID NO:4.
XX mouse; immune response; telomerase reverse transcriptase; TERT;
XX cytototoxic; immunostimulant; cancer; cytotoxic T cell response.
XX Mus sp.
XX WO2004002408-A2.
XX 08-JAN-2004.
XX 24-JUN-2003; 2003WO-US019844.
XX 27-JUN-2002; 2002US-0393295P.
XX (GERO-) GERON CORP.
XX Majumdar A, Ferber IA, Frolkis M, Wang Z;
XX WPI; 2004-071946/07.
XX N-PSDB; ADG90600.
XX Eliciting an immune response in a mammal specific for its own telomerase
XX reverse transcriptase (TERT), useful for treating or preventing cancer,
XX comprises administering a composition containing TERT of another
XX mammalian species.
XX Claim 10; SEQ ID NO 4; 44pp; English.
XX The invention relates to a novel method for eliciting an immune response
XX in a mammalian subject that is specific for its own telomerase reverse
XX transcriptase (TERT), comprising administering an immunogenic composition
XX containing a protein with at least 20 consecutive amino acids of TERT of
XX another mammalian species, or a nucleic acid encoding the protein. A
XX composition of the invention has cytostatic, and immunostimulant
XX activity. The protein or the nucleic acid encoding the protein is useful
XX in the manufacture of a medicament for the treatment of cancer in a human
XX or for eliciting a cytotoxic T cell response in a human.
SQ Sequence 1122 AA;
Query Match 58.8%; Score 3505; DB 8; Length 1122;
Best Local Similarity 62.4%; Pred. No. 2.2e-285; Indels 52; Gaps 13;
Matches 719; Conservative 122; Mismatches 260;
Qy 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGVRLVQRPAAFRALVAQCLVCVPW 60
Db 1 MTEAPRCPAVRSLLRSHYREVLPATFVRRLGPGVRLVQRPAAFRALVAQCLVCVPW 60
Qy 61 DARPPAAAFSFRQVSCIKELVARLORLCERGAQNVLAFGFALLDARGGPPPAFTSVR 120
Db 61 GSQPPPADLSFHQVSSKELVARVQRLCERNERNVLAFGFELLNARGGPPPAFTSVR 120
Qy 121 SYLPTNTVTALRGSGAWGLLREVGDVLLHLLARCALFVLVAPSCAYQVCGPPLVQLGA 180
Db 121 SYLPTNTVTALRGSGAWGLLREVGDVLLHLLARCALFVLVAPSCAYQVCGPPLVQLGA 180
Qy 181 ATOARPPPHAS-GPRRLRG-----CERAMHVSREAGVPLGLPAPGARRRGGSASRS 231
Db 181 TTDIWPVSASYPTRPVGRNFTNLRFLQOIKSSSRQEAAPKPLALPSRGTKRHLSTSTS 240
Qy 232 LPLPKRRRGAAPERTPVQGSWAHPGTRGSDRGFCVVSAPAR-----PAEEATSLE 286
Db 241 VPSAKKARCVPRVEEGP-----HRQVLPFPGSKW-VPSPARSPVPTAEKDLSSK 292
Qy 287 GALSCTRHSHPSVGRQHAGPPSTSPRPMDTCCPPVYAETKHLYSSGD-KEQLRPSF 345
Db 293 GKVSLSLS-GSVCKKPSSTLSLSPRQNAFLRP-FIETRHFLYSRGDGERLNPSF 350
Qy 346 LLSSLRSLTGARRLVETIFLGSWAHPGTRGSDRGFCVVSAPAR-----PAEEATSLE 405

Db 351 LLSNLQNLTCARLVEIIIFLGRSPTSGPLCRTHRLSRRYQWRPLFQQLLVNHAECQY 410
Qy 406 GVLLKTHCPLEAA---VTPAAGVCAREKPGQSVAAPEEDTDPRLLVQLLRQSSPWQVY 462
Db 411 VRLLRSHCRFTANQQTAL-----NTSPHMLDLLRLHSSPWQVY 452
Qy 463 GFVACLRRLVPPGLWGSRRNERFLNRTKKFISLGKHAKLSLOELTWKMSVRDCAWLR 522
Db 453 GFLRACLCKVVSASLWGRNRRFFKNLKKFISLGKYGKLSLOELMKWMKVEDCHWLR 512
Qy 523 SPGVGCVPAAEHRLREILAKFLHLMVSVVVELLSFFVYTTTFQKNRLFYRKSVMS 582
Db 513 SPGKDRVPAAEHLRERILATFLWMDTVVQLRSFFVYTTTFQKNRLFYRKSVMS 572
Qy 583 KLOSIGIRHLKRVQLRELSAEVQHRREARPAALLTSRLRFIPKPGDLRIYVMDYVGA 642
Db 573 KLOSIGVROHLRVRRLRELSQEVRRHODTWLAMPICRLRFIPKPNGLRPIVNMVSMGT 632
Qy 643 RTFRREKRAERLTSRVKALFSVLNRYERARRPGLLGASVLGDDIHRARWTFVLRVRAODP 702
Db 633 RALGRRKQAOHFTORLTKLSFMLNRYERTKPHLMGSSVLGMDIYRTWRAFLVRVRLDQ 692
Qy 703 PPELYFVKVDVTGAYDIPQDRITVETIASIK-PONTYCVRRYAVVQKAAGHGVKAFKS 761
Db 693 TPRMYFVKADVTGAYDAIPQGLVEVVANMIRHSESTYCIQYAVVRRDSQGVKHSFR 752
Qy 762 HVSTLTDLQPMQFVAHLQET--SPLRADVWTEOSSLINEASSGLFDVFLRMCCHAYR 819
Db 753 QVTTLSDLQPMQGLFHLQDSDASALRNSVWTEQSIWNSSSLFDFPLHFLRHSVVK 812
Qy 820 IRGKSVYQCOGIPQSGISLTLLCSLCYGD MENKLFAGIRRDGLLLRLVDLFLAVTPLH 879
Db 813 IGDRCTYQCOGIPQSGISLTLLCSLCYGD MENKLFAGVQDRDGLLLRFVDDFLVTHLQ 872
Qy 880 AKTFRLTVRGVPEYGCVMNLRKTVNFPVEDEALGTAFAVQMPAHGLFPWCGLLLDTRT 939
Db 873 AKTFRLTVRGVPEYGCVMNLRKTVNFPVEPGTLGGAAPYQLPAHCLFPWCGLLLDTRT 932
Qy 940 LEVQSDVSSVARTSIRASLTFRNGKAGRNMRKLFGLVLRKCHSLFLDLQVNSLQTVCT 999
Db 933 LEVFCDSYGAQTSIKTSLTFQSVFKAGTMRNKLISVLRKCHGLFLDLQVNSLQTVCI 992
Qy 1000 NIYKILLQAYRFHACVLQLPFHQQVMKNPTFFELRVISDTASLCYSGILKAKNAGMSLGAK 1059
Db 993 NIYKIFLQAYRFHACVQLPFDQVRKNLTFFLGISSQASCYAILKVKPFGMTLKAS 1052
Qy 1060 GAAGPLPSEAVQWLCHQAFLLKLTTRHRTVYVPLLGSRLTAQTOLSRKLPGTTLTALEAAA 1119
Db 1053 GS---FPPEAAHWLCYQAFLLKLAHSHVYKICLLGPLRTAQKLLCRKLPEATWTLKAAA 1109
Qy 1120 NPALPSDFKTILD 1132
Db 1110 DPALSTDFQTILD 1122

RESULT 56
ID ABB06711
XX ABB06711 standard; protein; 1122 AA.
AC ABB06711;
XX
DT 11-JUN-2002 (first entry)
XX
DE Mouse telomerase protein sequence.
XX
KW Mouse; telomerase; promoter; telomerase catalyst subunit; TERT; mTERT;
KW enzyme; transgenic mouse; drug development; anticancer.
XX
OS Mus sp.
XX
PN JP2002000121-A.
XX

PD 08-JAN-2002.
XX
PF 23-JUN-2000; 2000JP-00190137.
XX
PR 23-JUN-2000; 2000JP-00190137.
XX
PA (RIKO-) ZH RIKOGAKU SHINKOKAI.
XX (KIRI) KIRIN BREWERY KK.
DR WPI; 2002-298279/34.
XX
PT A transgenic mouse comprising a DNA promoter region of mouse telomerase
PT catalyst subunit (TERT) is used for the development of drugs and
PT anticancer agents for regeneration of tissues and organs.
XX
PS Disclosure; Fig 3; 13pp; Japanese.
XX
CC The present invention describes a transgenic mouse (1) comprising a DNA
CC construct having a DNA containing a promoter region of mouse telomerase
CC catalyst subunit (TERT) and a DNA containing a reporter gene connected
CC under the control of the promoter region. The transgenic mouse can be
CC used in the development of drugs and anticancer agents for regeneration
CC of tissues and organs. The present sequence represents the mouse
CC telomerase protein, which is given in the exemplification of the present
CC invention
XX
SQ Sequence 1122 AA;

Query Match 58.3%; Score 3475; DB 5; Length 1122;
Best Local Similarity 61.9%; Pred. No. 7, 4e-283;
Matches 714; Conservative 121; Mismatches 266; Indels 52; Gaps 12;

Qy 1 MPARPCRCARVRSLLRSHREVLPATFVRRLGPGQWRVLVQRGDPAARFALVAQCLVCPW 60
Db 1 MTRAPRCARVRSLLRSHREVLPATFVRRLGPGQWRVLVQRGDPAARFALVAQCLVCPW 60
Qy 61 DARPPAPAPSPQVSCLELVARVLCRCERKAGKVLAFGFAALLDARGGPEAFTTSVR 120
Db 61 GSQPPADLSFHQVSSSLKELVARVQRLCERNERNVLAFFGELLNEARGGPPMATTSVR 120
Qy 121 SYLPTNTVDALRGSGAWGLLRRVDDVLVHLARCALFVLVAPSCAYQCGPPYQLGA 180
Db 121 SYLPTNTVETLRVSGAWMLLSRVGDDLLVLLAHCALYLLVPPSCAYQVCGSPYQICA 180
Qy 181 ATQARPPPHAS-GPERRLG-----CERAWNHSVREAGVPLGLPARGARRGGSARS 231
Db 181 TTDIWPVSVSAYRPTRPVGRNFTNRLFLQIKSSRSQEAPEKPLALPSRGTKRHLSTSTS 240
Qy 232 LPLPKRPRRGAPEPERTPVGQGSWAHPGRTGRGSDRGFCVVSPAR-----PAEATSL 286
Db 241 VPSAKKARCYPVPRVEGPHRQVLPTPSGKSWP-----SPARSPEVPTAEKDLASK 292
Qy 287 GALSCTRHSHPVGRQHHAGPSTSRPPRPMDTTPCPVYAEKHFYSSGD-KEQLRPSF 345
Db 293 GKVSLSLS-GSVCKHKPSTSLSPRQNAFQLRP-FIETRHFLYSRGQDQERLNSF 350
Qy 346 LLSLRPLSTGARRLVETIFLGSRPWMEGTFRRLPRLPQRYQWRPFLLELLGNHAQCPY 405
Db 351 LLSNLQNLTCARLVEIIIFLGRSPTSGPLCRTHRLSRRYQWRPLFQQLLVNHAECQY 410
Qy 406 GVLLKTHCPLEAA---VTPAAGVCAREKPGQSVAAPEEDTDPRLLVQLLRQSSPWQVY 462
Db 411 VRLLRSHCRFTANQQTAL-----NTSPHMLDLLRLHSSPWQVY 452
Qy 463 GFVACLRRLVPPGLWGSRRNERFLNRTKKFISLGKHAKLSLOELTWKMSVRDCAWLR 522
Db 453 GFLRACLCKVVSASLWGRNRRFFKNLKKFISLGKYGKLSLOELMKWMKVEDCHWLR 512
Qy 523 SPGVGCVPAAEHRLREILAKFLHLMVSVVVELLSFFVYTTTFQKNRLFYRKSVMS 582
Db 513 SPGKDRVPAAEHLRERILATFLWMDTVVQLRSFFVYTTTFQKNRLFYRKSVMS 572
Qy 583 KLOSIGIRHLKRVQLRELSAEVQHRREARPAALLTSRLRFIPKPGDLRIYVMDYVGA 642

Db 573 KLSIGVQHLEVRVLSLSQEEVRRHQDTWLAMPICRLRFIPKPNGLRPIVNMYSMGMT 632
Qy 643 RTFPRKREARLTSRVKALFSVLYERARRPGLLGASVLGDDIHRARWRTFVLVRQAQDP 702
Db 633 RALGRRKQAOHFTORLKTLSFMLNYETKPHLMGSSVLGMDIYRTWRAFLVLRALDQ 692
Qy 703 PPELYFVKVDVTGAYDITPDRLTETVIAIIP-K-PONTYCVRRYAVVQAAAHGHRKAFKS 761
Db 693 TPRMYFVKADVTGAYDAIPQCKLVEVVANMIRHSESTYCIQAVVRRDQSQGVHKSFR 752
Qy 762 HVSTLTDLQPMQFVAHLQET--SPLRDVAVIEQSSLSNEASGLFDVFLRFWCHAVR 819
Db 753 QVTTLSDLQPMQGLFHLQDSDASALRNSVIEQSSLSNEASGLFDVFLRFWCHAVR 812
Qy 820 IRGKSYVQCQIGIPGGSITSLTLLCSLCYGDMEKLPAGIRRDGLLLRLVDDPFLVTLPHLTH 879
Db 813 IGRCYTCQCGIPGGSITSLTLLCSLCYGDMEKLPAGIRRDGLLLRLVDDPFLVTLPHLTH 872
Qy 880 AKTFRLTLVRGPEYGCYNLRTVNVNPFVEDEALGGTAFVQMPAHGLFPWCGLLLDTRT 939
Db 873 AKTFRLTLVRGPEYGCYNLRTVNVNPFVEDEALGGTAFVQMPAHGLFPWCGLLLDTRT 932
Qy 940 LEVQSDYSYVARTSIRASLTFNRFKAGRWRRKLFGLVRLKCHSLFLDLQVNSLQTVCT 999
Db 933 LEVFCDSYGYAOTSISLTFQSVFKAGTMRNKLKSLVRLKCHGLFLDLQVNSLQTVCI 992
Qy 1000 NIKYKILLQAVRHACVQLQPFHQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAK 1059
Db 993 NIKYKILLQAVRHACVQLQPFHQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAK 1052
Qy 1060 GAAGPLPSEAVOMLCHOAFLLKLTFRHRTVYVPLGSLRTAQTLRSKLPGLTTLTALEAAA 1119
Db 1053 GS---PPPEAAHMLCYQAFLLKLAHSHVYKCLLGLPLRTAQKLLCRKLPEATMTILKAAA 1109
Qy 1120 NPALPSPDFKILD 1132
Db 1110 DPALSTDFTQILD 1122
RESULT 57
AA00636
ID AA00636 standard; protein; 617 AA.
XX
AC AA00636;
XX
XX
DT 26-JUL-1999 (first entry)
XX
DE N-terminal truncated telomerase protein sequence.
XX
KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilms tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN W09001560-A1.
XX
XX 14-JAN-1999.
XX
XX 01-JUL-1998; 98WO-US013835.
XX
PR 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX
XX (CMB-) CAMBIA BIOSYSTEMS LLC.
XX
XX Kilian A, Bowtell D;

XX
DR WPI; 1999-106060/09.
N-PSDB; AAX18264.
XX
PT New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX
XX Claim 4; Fig 11b-c; 134pp; English.
PS
CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The C-terminus of
CC this sequence can be replaced by the sequence shown in AAY00653
XX
SQ Sequence 617 AA;
Query Match 54.3%; Score 3238; DB 2; Length 617;
Best Local Similarity 93.8%; Pred. No. 2.9e-263;
Matches 610; Conservative 0; Mismatches 0; Indels 40; Gaps 1;
Qy 1 MPRAPCRVRSLLRSHYREVLPATFVRRLGQGMRLVQGRDPAAPRALVAOCLVCVPW 60
Db 1 MPRAPCRVRSLLRSHYREVLPATFVRRLGQGMRLVQGRDPAAPRALVAOCLVCVPW 60
Qy 61 DARPPPAAPSPROVSCLELVARLQRCERGAKNVLAFGFALLDGGARGPPEAFTTSVR 120
Db 61 DARPPPAAPSPROVSCLELVARLQRCERGAKNVLAFGFALLDGGARGPPEAFTTSVR 120
Qy 121 SYLPTNTVDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
Db 121 SYLPTNTVDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
Qy 181 ATOARPPPHASGPRRLRGCEAWNHSVRAGVPLGLPAGCARRRGSASLSLPKPRR 240
Db 181 ATOARPPPHASGPRRLRGCEAWNHSVRAGVPLGLPAGCARRRGSASLSLPKPRR 240
Qy 241 GAAPEPERTPVGQSWAHFPGTRGSDRGFCVVSAPARPAEATSLGALSSTGRSHPSVG 300
Db 241 GAAPEPERTPVGQSWAHFPGTRGSDRGFCVVSAPARPAEATSLGALSSTGRSHPSVG 300
Qy 301 RQHAGPPSTSPRPWDTPCPVYAEKTHFLYSSGDKSQLRPSFLLSLRPSLTGARRL 360
Db 301 RQHAGPPSTSPRPWDTPCPVYAEKTHFLYSSGDKSQLRPSFLLSLRPSLTGARRL 360
Qy 361 VETIFLGSRPWMPGTPRRLPRLPQRYWQMRPLFLELLGNHQAOCYPYGLLTKHCPRAAVT 420
Db 361 VETIFLGSRPWMPGTPRRLPRLPQRYWQMRPLFLELLGNHQAOCYPYGLLTKHCPRAAVT 420
Qy 421 PAAGVCAREKPGQSWAAPPEEEDTPRRLVQLLRQHSHPQVYGFVRACLRLVPPGLWGS 480
Db 421 PAAGVCAREKPGQSWAAPPEEEDTPRRLVQLLRQHSHPQVYGFVRACLRLVPPGLWGS 480
Qy 481 RHNRERFLNTKKFISLGHAKLSLOELTWKMSVRDCAMLRSPGVCVGPAAHRLREI 540
Db 481 RHNRERFLNTKKFISLGHAKLSLOELTWKMSVRDCAMLRSPGVCVGPAAHRLREI 540
Qy 541 LAKFLHMLSVVVELLSFFVYTTTFQKNRLLFFYRKSVWSKLQSIGITROHLKRVOLRE 600
Db 541 LAKFLHMLSVVVELLSFFVYTTTFQKNRLLFFYRKSVWSKLQSIGITROHLKRVOLRE 600
Qy 601 LSEAEVRQREARPAALLTSRLRFIPKPDGLRPIVNMVYVVGARTFRREKR 650

```
Db 561 LSAEVRQHRARPALLTSRLRFPKPDGLRPVNMDDVVGARTFRREKR 610
|||||
RESULT 58
AA00635
ID AAY00635 standard; protein; 588 AA.
XX
AC AAY00635;
XX
DT 26-JUL-1999 (first entry)
XX
DE N-terminal truncated telomerase protein sequence.
XX
KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX
OS Homo sapiens.
OS Synthetic.
XX
FN WO9901560-A1.
XX
PD 14-JAN-1999.
XX
PF 01-JUL-1998; 98WO-US013835.
XX
PR 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX
PA (CAMB-) CAMBIA BIOSYSTEMS LLC.
XX
PI Kilian A, Bowtell D;
XX
DR WPI; 1999-106060/09.
DR N-PSDB; AAX18263.
XX
PT New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX
PS Claim 4; Fig 11a; 134pp; English.
XX
CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury
XX
SQ Sequence 588 AA;
Query Match 53.0%; Score 3160; DB 2; Length 588;
Best Local Similarity 100.0%; Pred. No. 9.e-257;
Matches 588; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPCRVAVRSLRSHYEVLPVPLATFVRRLGPGQWRLVQRGDPAAFRALVAQCIVCPW 60
Db 1 MPRAPCRVAVRSLRSHYEVLPVPLATFVRRLGPGQWRLVQRGDPAAFRALVAQCIVCPW 60
QY 61 DARPPPAAPFRQVSCLEKELVARVQLRCERGAKNVLAFGFALLDGAAGGPPPEAFTTSVR 120
```

```
Db 61 DARPPPAAPFRQVSCLEKELVARVQLRCERGAKNVLAFGFALLDGAAGGPPPEAFTTSVR 120
|||||
QY 121 SYLNTVTDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYVCGCPPLYQLGA 180
|||||
Db 121 SYLNTVTDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYVCGCPPLYQLGA 180
|||||
QY 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGLPAGARRRGGSASRSLLPKRPRR 240
|||||
Db 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGLPAGARRRGGSASRSLLPKRPRR 240
|||||
QY 241 GAAPPERTPVGGSWAHPPGRTGRGSPDRGFCVVSAPAEAEATSLEGALSGTRHSHPSVG 300
|||||
Db 241 GAAPPERTPVGGSWAHPPGRTGRGSPDRGFCVVSAPAEAEATSLEGALSGTRHSHPSVG 300
|||||
QY 301 RQHAGPSTSPRPDPWTPCPVVAETKHFYSSGDKQLRPSFLLSSLRPSLTGARRL 360
|||||
Db 301 RQHAGPSTSPRPDPWTPCPVVAETKHFYSSGDKQLRPSFLLSSLRPSLTGARRL 360
|||||
QY 361 VETIFLGSRPWMPGTTPRLPRLPQRYWQMRPLFLELLGNHQAQCPYGVLLKTHCPIRAAVT 420
|||||
Db 361 VETIFLGSRPWMPGTTPRLPRLPQRYWQMRPLFLELLGNHQAQCPYGVLLKTHCPIRAAVT 420
|||||
QY 421 PAAGVCAREKPGQSVAAPEEEDTPRRLVQLLRQHSVQVYGFVRACLRRLVPPGLWGS 480
|||||
Db 421 PAAGVCAREKPGQSVAAPEEEDTPRRLVQLLRQHSVQVYGFVRACLRRLVPPGLWGS 480
|||||
QY 481 RHNERFLRNTKFTISLGHAKLSLQELTWKMSVRDCAWLRSPGVGCVPAAEHRLREEI 540
|||||
Db 481 RHNERFLRNTKFTISLGHAKLSLQELTWKMSVRDCAWLRSPGVGCVPAAEHRLREEI 540
|||||
QY 541 LAKFLHLMWSVYVVELLRSFFVTTTFOKNRLFYRKSWSKLSQSIG 588
|||||
Db 541 LAKFLHLMWSVYVVELLRSFFVTTTFOKNRLFYRKSWSKLSQSIG 588
|||||
RESULT 59
AA00644
ID AAY00644 standard; protein; 588 AA.
XX
AC AAY00644;
XX
DT 26-JUL-1999 (first entry)
XX
DE N-terminal truncated telomerase (ver. 2) protein sequence.
XX
KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX
OS Homo sapiens.
OS Synthetic.
XX
FN WO9901560-A1.
XX
PD 14-JAN-1999.
XX
PF 01-JUL-1998; 98WO-US013835.
XX
PR 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX
PA (CAMB-) CAMBIA BIOSYSTEMS LLC.
XX
PI Kilian A, Bowtell D;
XX
DR WPI; 1999-106060/09.
DR N-PSDB; AAX18272.
XX
```

PT New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX
PS Claim 4; Fig 11t-u; 134pp; English.
XX
CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The N-terminus of
CC this sequence can be replaced by the sequences shown in AAY00656-Y00658
XX
SQ Sequence 588 AA;

Query Match 52.7%; Score 3144; DB 2; Length 588;
Best Local Similarity 99.7%; Pred. No. 2.2e-255;
Matches 586; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 MPRAPRCRAVRSLLRSHYREVILPLATFVRRLGQWFLVQDGPAAFRALVAOCLVCVPW 60
DB 1 MPRAPRCRAVRSLLRSHYREVILPLATFVRRLGQWFLVQDGPAAFRALVAOCLVCVPW 60
QY 61 DARPAPPAAPFROVSCLEKELVARVLQRLCERGAKNVLAFAFALLDARGGPPPAFTSVR 120
DB 61 DARPAPPAAPFROVSCLEKELVARVLQRLCERGAKNVLAFAFALLDARGGPPPAFTSVR 120
QY 121 SYLPNTVTDALRSGGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQCGPPLYQLGA 180
DB 121 SYLPNTVTDALRSGGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQCGPPLYQLGA 180
QY 181 ATOARPPHAGRRRLGCRANWHSVREAGVPLGLPARGARRGGSASRLPLPKPRR 240
DB 181 ATOARPPHAGRRRLGCRANWHSVREAGVPLGLPARGARRGGSASRLPLPKPRR 240
QY 241 GAAPERTPVQGSWAHPKTRGSDRGFCVSPAPAEATSGALSGTRHSPSVG 300
DB 241 GAAPERTPVQGSWAHPKTRGSDRGFCVSPAPAEATSGALSGTRHSPSVG 300
QY 301 RQHAGPPSTSRPPRWDTPCPPVYAEKHFYSSGDKQLRPSFLLSSLRPSLTGARRL 360
DB 301 RQHAGPPSTSRPPRWDTPCPPVYAEKHFYSSGDKQLRPSFLLSSLRPSLTGARRL 360
QY 361 VETIFGSRPWPMTGTPRLRLPQRYQWMPFLLELLGNHAQCPYGVLLKTHCPRAAVT 420
DB 361 VETIFGSRPWPMTGTPRLRLPQRYQWMPFLLELLGNHAQCPYGVLLKTHCPRAAVT 420
QY 421 PAAGVCAREKPGQSVAAPEEDTDPRLLVOLLRHQSSPWOVYGFVRACLRLVPPGLWGS 480
DB 421 PAAGVCAREKPGQSVAAPEEDTDPRLLVOLLRHQSSPWOVYGFVRACLRLVPPGLWGS 480
QY 481 RHNERRFLNTKXKIFSLGKHAKLSLOBLTWKMSVRCDCAWLRRSPGVGCVPAAEHLREEI 540
DB 481 RHNERRFLNTKXKIFSLGKHAKLSLOBLTWKMSVRCDCAWLRRSPGVGCVPAAEHLREEI 540
QY 541 LAKFLHLMMSVYVVELLSRFFYTETTFQKNRLFYFRKSVWSKLQSIG 588
DB 541 LAKFLHLMMSVYVVELLSRFFYTETTFQKNRLFYFRKSVWSKLQSIG 588

RESULT 60
AAY25463
ID AAY25463 standard; protein; 622 AA.
XX

AC AAY25463;
XX
DT 22-SEP-1999 (first entry)
XX
DE Human CRT-1 protein #3.
XX
KW CRT-1; reverse transcriptase; telomerase; inhibitor; detection;
KW telomerase activity; cancer cell; screening; human.
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Protein 1..622
FT /label= CRT-1
FT /note= "Partial sequence, no stop codon given"
XX
PN W09935261-A1.
XX
PD 15-JUL-1999.
XX
PF 08-JAN-1999; 99WO-JP000039.
XX
PR 08-JAN-1998; 98JP-00013232.
PR 30-JAN-1998; 98JP-00033584.
PR 06-MAY-1998; 98JP-00139177.
XX
PA (CHUS) CHUGAI SEIYAKU KK.
XX
PI Tsuchiya M, Yoshida K;
XX
DR WPI; 1999-430393/36.
DR N-PSDB; AAX88251.
XX
PT Novel gene, useful in detection of telomerase activity and cancer cells
PT as well as screening telomerase inhibitors for treatment of cancers.
XX
PS Example 1; Page 37-39; 44pp; Japanese.
XX
CC This invention describes novel human CRT-1 genes and their encoded
CC proteins containing a reverse transcriptase motif, which act as
CC telomerase inhibitors. The gene, its encoded protein and derived
CC antibodies can be used to provide base sequence information, detect
CC telomerase activity and cancer cells, and to screen telomerase
CC inhibitors. The detection method is simple and effective
XX
SQ Sequence 622 AA;
Query Match 52.6%; Score 3134; DB 2; Length 622;
Best Local Similarity 97.9%; Pred. No. 1.7e-254;
Matches 610; Conservative 3; Mismatches 6; Indels 4; Gaps 1;
QY 510 WKMSVRDCAWLRSPGVCVPAAEHLRBEILAKFLHLMMSVYVVELLSRFFYTETTFQ 569
DB 4 WRUTRRAVILAR----VGCVPAAEHLRBEILAKFLHLMMSVYVVELLSRFFYTETTFQ 59
QY 570 KNLFFYRKSVWSKLQSIGIRQHLKRVQLRELSAEVRQREARPPALLTSRLRFPKPDG 629
DB 60 KNLFFYRKSVWSKLQSIGIRQHLKRVQLRELSAEVRQREARPPALLTSRLRFPKPDG 119
QY 630 LRPIVNDYVVGARTFRREKRAERLTSRVKALFSLVNYERARRPGLLGASVLGLDDTHRA 689
DB 120 LRPIVNDYVVGARTFRREKRAERLTSRVKALFSLVNYERARRPGLLGASVLGLDDTHRA 179
QY 690 WRPFVLRVAQDPPPELYFVKVDVTGAYDTIPQDLTEVIASIIKQNTYCVRRYAVVQK 749
DB 180 WRPFVLRVAQDPPPELYFVKVDVTGAYDTIPQDLTEVIASIIKQNTYCVRRYAVVQK 239
QY 750 AAHGHVKAFAKSHVSTLTDLQPYMROFVAHQSTPLRDAVIEQSSLSNEASSGLDFVF 809
DB 240 AAHGHVKAFAKSHVSTLTDLQPYMROFVAHQSTPLRDAVIEQSSLSNEASSGLDFVF 299
QY 810 LRPFMCHAVRIGKSVYVQCGIPQGSILSTLLCSLCVGDGMENKLFAGIRDRGLLRVDD 869

Db 300 LRFWCHHAVRIRGKSYVQCQGIPOGSIILSTLCLSLCYGDMENKLFAGIRRDGLLLRLVDD 359
Qy 870 FLLVTPHLTHAKTFLRTLVRGPVYGCVMNLRKTVVNFVPEDEALGCTAFVQMPAHGLFP 929
Db 360 FLLVTPHLTHAKTFLRTLVRGPVYGCVMNLRKTVVNFVPEDEALGCTAFVQMPAHGLFP 419
Qy 930 WCGLLLDTRTLEVQSDYSSYARTSIRASLTFRNRFKAGRMRRKLFGLVRLKCHSLFLDL 989
Db 420 WCGLLLDTRTLEVQSDYSSYARTSIRASLTFRNRFKAGRMRRKLFGLVRLKCHSLFLDL 479
Qy 990 QVNSLQTVCTNIYKILLQAYRFHACVQLPFPHQVWKNPTFFLRVISTASILKKA 1049
Db 480 QVNSLQTVCTNIYKILLQAYRFHACVQLPFPHQVWKNPTFFLRVISTASILKKA 539
Qy 1050 KNAGWSLGAAGAAGPLSEAVQWMLCHQAFLLKLTFRHRVTYVPLLGSLRTAQTOLSRKLP 1109
Db 540 KNAGWSLGAAGAAGPLSEAVQWMLCHQAFLLKLTFRHRVTYVPLLGSLRTAQTOLSRKLP 599
Qy 1110 TTTLTALEAAANPALPSDFKTILD 1132
Db 600 TTTLTALEAAANPALPSDFKTILD 622

RESULT 61
AAW97384
ID AAW97384 standard; protein; 591 AA.
AC AAW97384;
XX
DT 14-MAY-1999 (first entry)
XX
DE A catalytic telomerase protein.
XX
KW Catalytic telomerase; diagnosis; disease; telomerase activity.
XX
OS Homo sapiens.
XX
XX JP11046768-A.
PN
XX
PD 23-FEB-1999.
XX
XX 01-AUG-1997; 97JP-00207708.
XX
XX 01-AUG-1997; 97JP-00207708.
XX
XX (MITU) MITSUBISHI CHEM CORP.
XX
XX WPI; 1999-208111/18.
DR
DR N-PSDB; AAX15923.
XX
PT New catalytic protein of telomerase of a higher animal and a gene coding
PT it - useful for diagnosis of diseases caused by the change in activity of
PT a telomerase.
XX
XX Claim 1; Page 11-14; 18pp; Japanese.
PS
XX
CC The present sequence represents a catalytic telomerase protein. The
CC products are useful in drug compositions for the diagnosis of diseases
CC caused by the change in activity of telomerase
XX
SQ Sequence 591 AA;

Query Match 51.1%; Score 3047; DB 2; Length 591;
Best Local Similarity 100.0%; Pred. No. 3.3e-247;
Matches 591; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 542 AKFHLWMSVYVVELLSRFYVTTTFQKNRLFYFRKSVWSKLSQIGIRQHUKRVQLREL 601
Db 1 AKFHLWMSVYVVELLSRFYVTTTFQKNRLFYFRKSVWSKLSQIGIRQHUKRVQLREL 60
Qy 602 SEAEVQRHREARPALTLRLRFPKDPGLRPVNMVDYVVGARTFRREKRAELTSSVKAL 661
Db 61 SEAEVQRHREARPALTLRLRFPKDPGLRPVNMVDYVVGARTFRREKRAELTSSVKAL 120

Qy 662 FSVLVYERARRRGLIGASVLGLDDIHRAWRTFVLVRQAQDPPELYFVKVDVTGAYDTTP 721
Db 121 FSVLVYERARRRGLIGASVLGLDDIHRAWRTFVLVRQAQDPPELYFVKVDVTGAYDTTP 180
Qy 722 QDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAHLQ 781
Db 181 QDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAHLQ 240
Qy 782 ETSPLRDVAVIQQSSSLNEASSGLFDVFLRFWCHHAVRIRGKSYVQCQGIPOGSIILSTLL 841
Db 241 ETSPLRDVAVIQQSSSLNEASSGLFDVFLRFWCHHAVRIRGKSYVQCQGIPOGSIILSTLL 300
Qy 842 CSLCYGDMENKLFAGIRRDGLLLRLVDDFLLVTPHLTHAKTFLRTLVRGPVYGCVMNLR 901
Db 301 CSLCYGDMENKLFAGIRRDGLLLRLVDDFLLVTPHLTHAKTFLRTLVRGPVYGCVMNLR 360
Qy 902 KTVVNFVPEDEALGCTAFVQMPAHGLFPWCGLLLDTRTLEVQSDYSSYARTSIRASLTEN 961
Db 361 KTVVNFVPEDEALGCTAFVQMPAHGLFPWCGLLLDTRTLEVQSDYSSYARTSIRASLTEN 420
Qy 962 RGFKAGRMRRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVQLPFP 1021
Db 421 RGFKAGRMRRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVQLPFP 480
Qy 1022 HQVWKNPTFFLRVISTASILCYSLKAKNAGMSLGAKGAGPLPSEAVQWMLCHQAFLLK 1081
Db 481 HQVWKNPTFFLRVISTASILCYSLKAKNAGMSLGAKGAGPLPSEAVQWMLCHQAFLLK 540
Qy 1082 LTRHRVTYVPLLGSLRTAQTOLSRKLPCTTLTALEAAANPALPSDFKTILD 1132
Db 541 LTRHRVTYVPLLGSLRTAQTOLSRKLPCTTLTALEAAANPALPSDFKTILD 591

RESULT 62
AAO29840
ID AAO29840 standard; protein; 500 AA.
XX
AC AAO29840;
XX
DT 27-AUG-2003 (first entry)
XX
DE Human telomerase reverse transcriptase (hTERT).
XX
KW Human; telomerase reverse transcriptase; MHC; tumour-associated antigen;
KW hyperproliferative disease; major histocompatibility complex; hTERT; TAA;
KW immune-mediated disease; systemic lupus erythematosus; protein therapy;
KW Grave's disease; multiple sclerosis; atherosclerosis; cancer; diabetes;
KW Crohn's disease; gene therapy; arthritis; enzyme; vaccine; vasculitis;
KW cell therapy.
XX
OS Homo sapiens.
XX
XX WO2003038047-A2.
PN
XX
PD 08-MAY-2003.
XX
XX 29-OCT-2002; 2002WO-US034588.
PF
XX
PR 29-OCT-2001; 2001US-0345012P.
XX
XX (BAYU) BAYLOR COLLEGE MEDICINE.
PA
XX
XX Chen S, ZhaoYang Y, Schroers R;
PI
XX
XX WPI; 2003-430511/40.
DR
XX
XX New human telomerase reverse transcriptase tumor-associated MHC-I or MHC-
PT II restricted polynucleotides and antigens, useful for treating cancers
PT (e.g. lung or bone cancer or lymphomas), Crohn's disease or multiple
PT sclerosis.
XX
PS Example 9; Fig 2C; 143pp; English.

XX The invention relates to human telomerase reverse transcriptase (hTERT)
CC major histocompatibility complex (MHC)-I and MHC-II restricted tumour-
CC associated antigens (TAA) and polynucleotides encoding such proteins. The
CC invention is useful for treating hyperproliferative diseases such as
CC cancer (e.g. lung cancer, head and neck cancer, pancreatic cancer, breast
CC cancer, prostate cancer, renal cancer, bone cancer, testicular cancer,
CC cervical cancer, gastrointestinal cancer, lymphomas, colon cancer, pre-
CC neoplastic lesions in the lung, melanoma or bladder cancer) or immune-
CC mediated diseases which include arthritis, Crohn's disease, vasculitis,
CC Grave's disease, multiple sclerosis, atherosclerosis, diabetes, systemic
CC lupus erythematosus etc. The invention is used in gene therapy, protein
CC therapy, cell therapy and also in the preparation of vaccines. The
CC present sequence is hTERT protein

XX Sequence 500 AA;

Query Match 43.4%; Score 2590; DB 6; Length 500;
Best Local Similarity 100.0%; Pred. No. 7.8e-209;
Matches 500; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 533 EHRLEBILAKFLHLMVSVVVELLRGFFVYVTTTFOKNRLFYRKSVWKSQSIGIRQH 592
Db 1 EHRLEBILAKFLHLMVSVVVELLRGFFVYVTTTFOKNRLFYRKSVWKSQSIGIRQH 60
QY 593 LKRVQLRELSEAEVRQHREARPAALLTSRLRPIPKPDGLRPIVNMYYVVGARTFRREKRAE 652
Db 61 LKRVQLRELSEAEVRQHREARPAALLTSRLRPIPKPDGLRPIVNMYYVVGARTFRREKRAE 120
QY 653 RLTSRVKALFVNLVYERARRPGLLGASVGLGDDIHRAWRFTVLVRAQDPPPELYFVKVD 712
Db 121 RLTSRVKALFVNLVYERARRPGLLGASVGLGDDIHRAWRFTVLVRAQDPPPELYFVKVD 180
QY 713 VTGAYDTIPDRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKFSHVSTLTDLPY 772
Db 181 VTGAYDTIPDRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKFSHVSTLTDLPY 240
QY 773 MRQFVAHLQETSPLRDAVWIEQSSSLNEASSGLFDVFLRMCHHAVRIRGKSVYQCQGP 832
Db 241 MRQFVAHLQETSPLRDAVWIEQSSSLNEASSGLFDVFLRMCHHAVRIRGKSVYQCQGP 300
QY 833 QGSITSLTLLCSLCYGDNMENKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRLVRGVP 892
Db 301 QGSITSLTLLCSLCYGDNMENKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRLVRGVP 360
QY 893 EYGCNVNLRKTVVNFVPEDEALGCTAFVQMPAHGLFPWCGLLDTRTLEVSQDSSYART 952
Db 361 EYGCNVNLRKTVVNFVPEDEALGCTAFVQMPAHGLFPWCGLLDTRTLEVSQDSSYART 420
QY 953 SIRASLTFNRGFKAGRNMRKLFGLRLKCHSLFGLDLQVNSLQTVCTNIYKILLQAYRF 1012
Db 421 SIRASLTFNRGFKAGRNMRKLFGLRLKCHSLFGLDLQVNSLQTVCTNIYKILLQAYRF 480
QY 1013 HACVLQLPFFHQVQWKNPTFF 1032
Db 481 HACVLQLPFFHQVQWKNPTFF 500

RESULT 63

ABB99678
ID ABB99678 standard; protein; 499 AA.

XX ABB99678;

DT 28-MAR-2003 (first entry)

XX Amino acid sequence of human telomerase reverse transcriptase fragment.
DE Human; telomerase reverse transcriptase; hTERT; T cell response; vaccine;
KW cancer.
XX Homo sapiens.

OS Homo sapiens.

XX

PN WO200294312-A1.
XX
PD 28-NOV-2002.
XX
PF 16-MAY-2002; 2002WO-NO000176.
XX
PR 21-MAY-2001; 2001GB-00012342.
XX
PA (GEMV-) GEMVAX AS.
PI Eriksen JA, Gaudernack G, Moller M, Saeboe-Larsen S;
XX WPI; 2003-129380/12.
XX
XX New polypeptides derived from human telomerase reverse transcriptase,
PT useful in preparing a medicament for treating or preventing cancer, or in
PT preparing a diagnostic for diagnosing cancer, e.g. breast cancer or
PT prostate cancer.
XX
PS Disclosure; Fig 2; 56pp; English.
XX

CC The present sequence represents a fragment of human telomerase reverse
CC transcriptase (hTERT). The specification describes peptides derived from
CC hTERT, which are capable of inducing a T cell response and are used in
CC medicine. The hTERT peptides and nucleic acids encoding them are useful
CC in preparing a medicament, which is a vaccine, an antisense molecule, or
CC is capable of generating an antisense molecule in vivo, for treating
CC cancer, or in preparing a diagnostic for diagnosing cancer. The cancer
CC is, for example, breast cancer, prostate cancer, pancreatic cancer, colo-
CC rectal cancer, lung cancer, malignant melanoma, leukemia, lymphoma,
CC ovarian cancer, cervical cancer, or a biliary tract carcinoma
XX
SQ Sequence 499 AA;

Query Match 43.2%; Score 2576; DB 6; Length 499;
Best Local Similarity 100.0%; Pred. No. 1.2e-207;
Matches 499; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 634 VNMDYVVGARTFRREKRAERLTSRVKALFVNLVYERARRPGLLGASVGLGDDIHRAWRTF 693
Db 1 VNMDYVVGARTFRREKRAERLTSRVKALFVNLVYERARRPGLLGASVGLGDDIHRAWRTF 60
QY 694 VLRVRAQDPPPELYFVKVDVTGAYDTIPDRLTEVIASIIKPQNTYCVRRYAVVQKAAGH 753
Db 61 VLRVRAQDPPPELYFVKVDVTGAYDTIPDRLTEVIASIIKPQNTYCVRRYAVVQKAAGH 120
QY 754 HVRKAFKSHVSTLTDLPYMRQFVAHLQETSPLRDAVWIEQSSSLNEASSGLFDVFLRFM 813
Db 121 HVRKAFKSHVSTLTDLPYMRQFVAHLQETSPLRDAVWIEQSSSLNEASSGLFDVFLRFM 180
QY 814 CHHAVRIRGKSVYQCQGIPOGSIITSLTLLCSLCYGDNMENKLFAGIRRDGLLLRLVDDFLV 873
Db 181 CHHAVRIRGKSVYQCQGIPOGSIITSLTLLCSLCYGDNMENKLFAGIRRDGLLLRLVDDFLV 240
QY 874 TPHLTHAKTFLRLVRGVPYEGCVNLRKTVVNFVPEDEALGCTAFVQMPAHGLFPWCG 933
Db 241 TPHLTHAKTFLRLVRGVPYEGCVNLRKTVVNFVPEDEALGCTAFVQMPAHGLFPWCG 300
QY 934 LLDTRTLEVSQDSSYARTSIRASLTFNRGFKAGRNMRKLFGLRLKCHSLFGLDLQVNS 993
Db 301 LLDTRTLEVSQDSSYARTSIRASLTFNRGFKAGRNMRKLFGLRLKCHSLFGLDLQVNS 360
QY 994 LQTVCTNIYKILLQAYRFHACVQLPFFHQVQWKNPTFFLRVISTDASLTCYSILKAKNAG 1053
Db 361 LQTVCTNIYKILLQAYRFHACVQLPFFHQVQWKNPTFFLRVISTDASLTCYSILKAKNAG 420
QY 1054 MSLGAKGAAGPLPSEAVQWLCHQAFLLKLTTRHRTVTVPLGSLRTAQTLRSRLPGTTLT 1113
Db 421 MSLGAKGAAGPLPSEAVQWLCHQAFLLKLTTRHRTVTVPLGSLRTAQTLRSRLPGTTLT 480
QY 1114 ALEAAANPALPSDFKTILD 1132
Db 481 ALEAAANPALPSDFKTILD 499


```
ID AAY25462 standard; protein; 438 AA.
XX AC
XX AAY25462;
XX
DT 22-SEP-1999 (first entry)
XX
XX Human CRT-1 protein #2.
XX
XX CRT-1; reverse transcriptase; telomerase; inhibitor; detection;
XX telomerase activity; cancer cell; screening; human.
XX
XX Homo sapiens.
XX
FH Key Location/Qualifiers
FT Protein 1..438
FT /label= CRT-1
FT /note= "Partial sequence, no stop codon given"
XX
XX WO9935261-A1.
XX
XX 15-JUL-1999.
XX
XX 08-JAN-1999; 99WO-JP000039.
XX
XX 08-JAN-1998; 98JP-00013232.
XX
XX 30-JAN-1998; 98JP-00033584.
XX
XX 06-MAY-1998; 98JP-00139177.
XX
XX (CHUS ) CHUGAI SEIYAKU KK.
XX
XX Tauchiya M, Yoshida K;
XX
XX WPI; 1999-430393/36.
XX
XX N-PSDB; AAX88250.
XX
XX Novel gene, useful in detection of telomerase activity and cancer cells
XX as well as screening telomerase inhibitors for treatment of cancers.
XX
XX Example 1; Page 35-36; 44pp; Japanese.
XX
XX This invention describes novel human CRT-1 genes and their encoded
XX proteins containing a reverse transcriptase motif, which act as
XX telomerase inhibitors. The gene, its encoded protein and derived
XX antibodies can be used to provide base sequence information, detect
XX telomerase activity and cancer cells, and to screen telomerase
XX inhibitors. The detection method is simple and effective
XX
XX SQ Sequence 438 AA;
XX
XX Query Match 36.6%; Score 2184; DB 2; Length 438;
XX Best Local Similarity 97.0%; Pred. No. 9.8e-175;
XX Matches 425; Conservative 3; Mismatches 6; Indels 4; Gaps 1;
XX
XX 510 WKMSVRDCAMLRSPGVCVPAAEHRLREBEILAKFLHLMMSVYVVELLSFFVYTTTFQ 569
XX :::: ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
XX 4 WRLTRRAVILAR----VGCVPAAEHRLREBEILAKFLHLMMSVYVVELLSFFVYTTTFQ 59
XX
XX 570 KNRLFFYRKVSWKLSQIGIRQHLKRVQLRELSEAEVRQREARPALTSRLRFIPKPDG 629
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
XX 60 KNRLFFYRKVSWKLSQIGIRQHLKRVQLRELSEAEVRQREARPALTSRLRFIPKPDG 119
XX
XX 630 LRPIVNMNDYVVGARTFRREKRAERLTSRVKALFSVLNRYERARRPGLLGASVLGLDDIHRH 689
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
XX 120 LRPIVNMNDYVVGARTFRREKRAERLTSRVKALFSVLNRYERARRPGLLGASVLGLDDIHRH 179
XX
XX 690 WRTFVLVRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIASIKPQNTYCVRRYAVVQK 749
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
XX 180 WRTFVLVRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIASIKPQNTYCVRRYAVVQK 239
XX
XX 750 AAGHGVKAFKSHVSTLTLDQPMRQFVAHLQETSPLRDVAVVEQSSSLNEASSGLPDDVF 809
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
XX 240 AAGHGVKAFKSHVSTLTLDQPMRQFVAHLQETSPLRDVAVVEQSSSLNEASSGLPDDVF 299
XX
```

```
QY 810 LRFMCHHAVRIRKGSYVQCQIPQSGILSTLLCSLCYGDMEKLFAGIRRDGLLLRLVDD 869
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
DB 300 LRFMCHHAVRIRKGSYVQCQIPQSGILSTLLCSLCYGDMEKLFAGIRRDGLLLRLVDD 359
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
QY 870 FLIVTPHLTHAKTFLRLTVRGVPEYGCVVNLRKTVNFPVEDEALGGTAFVQMPAHGLFP 929
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
DB 360 FLIVTPHLTHAKTFLRLTVRGVPEYGCVVNLRKTVNFPVEDEALGGTAFVQMPAHGLFP 419
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
QY 930 WCGLLLDTRTLEVSQSDYS 947
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
DB 420 WCGLLLDTRTLEVSQSDYS 437
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||

RESULT 66
ABB99680
ID ABB99680 standard; protein; 436 AA.
XX
XX ABB99680;
XX
XX 28-MAR-2003 (first entry)
XX
XX Splice variant of a human telomerase reverse transcriptase fragment.
XX
XX Human; telomerase reverse transcriptase; hTERT; T cell response; vaccine;
XX cancer.
XX
XX Homo sapiens.
XX
XX WO200294312-A1.
XX
XX 28-NOV-2002.
XX
XX 16-MAY-2002; 2002WO-NO000176.
XX
XX 21-MAY-2001; 2001GB-00012342.
XX
XX (GEMV-) GEMVAX AS.
XX
XX Eriksen JA, Gaudernack G, Moller M, Saebøe-Larssen S;
XX
XX WPI; 2003-129380/12.
XX
XX New polypeptides derived from human telomerase reverse transcriptase,
XX useful in preparing a medicament for treating or preventing cancer, or in
XX preparing a diagnostic for diagnosing cancer, e.g. breast cancer or
XX prostate cancer.
XX
XX Disclosure; Fig 2; 56pp; English.
XX
XX The present sequence represents a splice variant of a fragment of human
XX telomerase reverse transcriptase (hTERT). The specification describes
XX peptides derived from hTERT which are capable of inducing a T cell
XX response and are used in medicine. The hTERT peptides and nucleic acids
XX encoding them are useful in preparing a medicament, which is a vaccine,
XX an antisense molecule, or is capable of generating an antisense molecule
XX in vivo, for treating cancer, or in preparing a diagnostic for diagnosing
XX cancer. The cancer is, for example, breast cancer, prostate cancer,
XX pancreatic cancer, colo-rectal cancer, lung cancer, malignant melanoma,
XX leukemia, lymphoma, ovarian cancer, cervical cancer, or a biliary tract
XX carcinoma
XX
XX SQ Sequence 436 AA;
XX
XX Query Match 36.6%; Score 2181; DB 6; Length 436;
XX Best Local Similarity 100.0%; Pred. No. 1.8e-174;
XX Matches 421; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX 634 VNMDYVVGARTFRREKRAERLTSRVKALFSVLNRYERARRPGLLGASVLGLDDIHRWRTF 693
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
DB 1 VNMDYVVGARTFRREKRAERLTSRVKALFSVLNRYERARRPGLLGASVLGLDDIHRWRTF 60
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
QY 694 VLRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIASIKPQNTYCVRRYAVVQAAHG 753
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
XX ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
```

Db 61 VLVRQAQPPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKPONTYCVRRYAVVQKAHG 120
QY 754 HVRKAFKSHVSTLTDLQPMRQFVAHLQETSPFLRDADVIEOSSSINEASSGLFDVFLRFM 813
Db 121 HVRKAFKSHVSTLTDLQPMRQFVAHLQETSPFLRDADVIEOSSSINEASSGLFDVFLRFM 180
QY 814 CHHAVIRGKSVYVQCGIPQGSII STLCSLCYGD MENKLFAGIRRDGLLLRLVDDFLV 873
Db 181 CHHAVIRGKSVYVQCGIPQGSII STLCSLCYGD MENKLFAGIRRDGLLLRLVDDFLV 240
QY 874 TPLHTHAKTFLRTLVRGVPEYGCVVNLKRTVNFPEVEALGGTAFVQMPAHGLFPWCGL 933
Db 241 TPLHTHAKTFLRTLVRGVPEYGCVVNLKRTVNFPEVEALGGTAFVQMPAHGLFPWCGL 300
QY 934 LLDTRTLEVSQSDYSYARTSIRASLTENRGFKAGNNMRRLFGVLRUKCHSLFLDLQVNS 993
Db 301 LLDTRTLEVSQSDYSYARTSIRASLTENRGFKAGNNMRRLFGVLRUKCHSLFLDLQVNS 360
QY 994 LQTVCTNIYKILLQAVRFHACVQLPFPHQQVWKNPTFFLRVISDTASLCYSILKAKNAG 1053
Db 361 LQTVCTNIYKILLQAVRFHACVQLPFPHQQVWKNPTFFLRVISDTASLCYSILKAKNAG 420
QY 1054 M 1054
Db 421 M 421

RESULT 67
ABB99679
ID ABB99679 standard; protein; 463 AA.
XX AC ABB99679;
XX AC ABB99679;
XX DT 28-MAR-2003 (first entry)
XX DE Splice variant of a human telomerase reverse transcriptase fragment.
XX KW Human; telomerase reverse transcriptase; hTERT; T cell response; vaccine;
XX KW cancer.
XX OS Homo sapiens.
XX PN WO200294312-A1.
XX PD 28-NOV-2002.
XX PF 16-MAY-2002; 2002WO-NO000176.
XX PR 21-MAY-2001; 2001GB-00012342.
XX PA (GEMV-) GEMVAX AS.
XX PI Eriksen JA, Gaudernack G, Moller M, Saeboe-Larsen S;
XX WPI; 2003-129380/12.
XX PT New polypeptides derived from human telomerase reverse transcriptase,
XX useful in preparing a medicament for treating or preventing cancer, or in
XX preparing a diagnostic for diagnosing cancer, e.g. breast cancer or
XX prostate cancer.
XX PS Disclosure; Fig 2; 56pp; English.
XX CC The present sequence represents a splice variant of a fragment of human
XX telomerase reverse transcriptase (hTERT). The specification describes
XX peptides derived from hTERT, which are capable of inducing a T cell
XX response and are used in medicine. The hTERT peptides and nucleic acids
XX encoding them are useful in preparing a medicament, which is a vaccine,
XX an antisense molecule, or is capable of generating an antisense molecule
XX in vivo, for treating cancer, or in preparing a diagnostic for diagnosing
XX cancer. The cancer is, for example, breast cancer, prostate cancer,
XX pancreatic cancer, colo-rectal cancer, lung cancer, malignant melanoma,
XX leukemia, lymphoma, ovarian cancer, cervical cancer, or a biliary tract

CC Carcinoma
XX XX Sequence 463 AA;
SQ
Query Match 36.4%; Score 2170; DB 6; Length 463;
Best Local Similarity 100.0%; Pred. No. 1.6e-173;
Matches 419; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 634 VNMDYVVGARTFRREKRAERLTSRVKALFVSNLYERARRPGLLGASVLGLDDIHRARWTF 693
Db 1 VNMDYVVGARTFRREKRAERLTSRVKALFVSNLYERARRPGLLGASVLGLDDIHRARWTF 60
QY 694 VLVRQAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKPONTYCVRRYAVVQKAHG 753
Db 61 VLVRQAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKPONTYCVRRYAVVQKAHG 120
QY 754 HVRKAFKSHVSTLTDLQPMRQFVAHLQETSPFLRDADVIEOSSSINEASSGLFDVFLRFM 813
Db 121 HVRKAFKSHVSTLTDLQPMRQFVAHLQETSPFLRDADVIEOSSSINEASSGLFDVFLRFM 180
QY 814 CHHAVIRGKSVYVQCGIPQGSII STLCSLCYGD MENKLFAGIRRDGLLLRLVDDFLV 873
Db 181 CHHAVIRGKSVYVQCGIPQGSII STLCSLCYGD MENKLFAGIRRDGLLLRLVDDFLV 240
QY 874 TPLHTHAKTFLRTLVRGVPEYGCVVNLKRTVNFPEVEALGGTAFVQMPAHGLFPWCGL 933
Db 241 TPLHTHAKTFLRTLVRGVPEYGCVVNLKRTVNFPEVEALGGTAFVQMPAHGLFPWCGL 300
QY 934 LLDTRTLEVSQSDYSYARTSIRASLTENRGFKAGNNMRRLFGVLRUKCHSLFLDLQVNS 993
Db 301 LLDTRTLEVSQSDYSYARTSIRASLTENRGFKAGNNMRRLFGVLRUKCHSLFLDLQVNS 360
QY 994 LQTVCTNIYKILLQAVRFHACVQLPFPHQQVWKNPTFFLRVISDTASLCYSILKAKNA 1052
Db 361 LQTVCTNIYKILLQAVRFHACVQLPFPHQQVWKNPTFFLRVISDTASLCYSILKAKNA 419

RESULT 68
AAV25461
ID AAV25461 standard; protein; 437 AA.
XX AC AAV25461;
XX DT 22-SEP-1999 (first entry)
XX DE Human CRT-1 protein #1.
XX KW CRT-1; reverse transcriptase; telomerase; inhibitor; detection;
XX KW telomerase activity; cancer cell; screening; human.
XX OS Homo sapiens.
XX FH Key Location/Qualifiers
XX FT Protein 1..437
XX FT /label= CRT-1
XX FT /note= "Partial sequence, no stop codon given"
XX PN WO9935261-A1.
XX PD 15-JUL-1999.
XX PF 08-JAN-1999; 99WO-JP0000039.
XX PR 08-JAN-1998; 98JP-00013232.
XX PR 30-JAN-1998; 98JP-00033584.
XX PR 06-MAY-1998; 98JP-00139177.
XX PA (CHUS) CHUGAI SEIYAKU KK.
XX PI Tsuchiya M, Yoshida K;
XX WPI; 1999-430393/36.
XX DR N-PSDB; AAX88243.

Db 520 RLPSTSPHPQRLPCPCPHLLPGVNRHHEMSWRRPSPYPGHTWLLIGCAPQFNFWHLR 579
Qy 600 ELSAEVROHREARPAALLTSLRLEPKDGLRPVNDYVVGARTFREKRAERLTSRVK 659
Db 580 ELSAEVRRHREARPAALLTSLRLEPKDGLRPVNDYVVGARTFREKRAERLTSRVK 639
Qy 660 ALFSLVLYERARRPGLGASVLGDDIHRARWTFVLRVRAQDPPPELYFVKVDVTGAYDT 719
Db 640 TLFSLVLYERARRPGLGASVLGDDIHRARWTFVLRVRAQDPPPELYFVKVDVTGAYDA 699
Qy 720 IPQDRLTEVIASIKPO-NYCYRRYAVVQKAAGHCHVRKAFKSH 762
Db 700 LPQDRLVEVIANVIRPOESTCYVRHVAVQRTARGHVRKAFKSH 743

RESULT 70
AAW56109
ID AAW56109 standard; protein; 564 AA.
XX AAW56109;
XX 13-AUG-1998 (first entry)
XX Human telomerase reverse transcriptase 63 kDa clone 712562 protein.
XX Human; telomerase reverse transcriptase; hTERT; TERT; diagnosis; prognosis;
XX cell proliferation; cancer; ageing; ribonucleoprotein.
XX Synthetic.
XX Homo sapiens.

Key Location/Qualifiers
FH Misc-difference 102
FT /label= encoded by ARG
FN GB2317891-A.
XX 08-APR-1998.
XX 01-OCT-1997; 97GB-00020890.
XX 01-OCT-1996; 96US-00724643.
XX 18-APR-1997; 97US-00844419.
XX 25-APR-1997; 97US-00846017.
XX 06-MAY-1997; 97US-00851843.
XX 09-MAY-1997; 97US-00854050.
XX 14-AUG-1997; 97US-00911312.
XX 14-AUG-1997; 97US-00912951.
XX 14-AUG-1997; 97US-00915503.
XX (GERO-) GERON CORP.
XX (UYTE-) UNIV TECHNOLOGY CORP.
XX Cach TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
XX Andrews WH;
XX WPI; 1998-171633/16.
XX N-PSDB; AAV22426.

Pure and recombinant human Telomerase Reverse Transcriptase and its
variants - are useful in the diagnosis, prognosis and treatment of cell
proliferation conditions especially cancer and ageing.
XX
XX Example 1; Fig 68; 387pp; English.
XX
XX The present sequence is a human telomerase reverse transcriptase (hTERT)
XX clone protein from the present invention. The present invention also
XX describes the following methods: (A) determining whether a test compound
XX is a modulator of hTERT, by detecting the change in hTERT recombinant
XX protein or polynucleotide, on administration of the compound; (B)
XX preparation of recombinant telomerase by contacting a protein preparation
XX of hTERT with a telomerase RNA component; (C) detection of the hTERT RNA or

CC protein in a sample by binding a relevant probe to the sample and
CC detecting the complex formed or in the case of RNA detection, amplifying
CC the product and correlating the presence of complex or amplification
CC product with presence of hTERT in the sample; and (D) increasing the
CC proliferation of a vertebrate cell by increasing hTERT expression; and (E)
CC the use of an agent that causes an increase in cell vertebrate cell
CC proliferation to create a medicament that inhibits ageing. A protein
CC preparation of hTERT and the polynucleotide encoding hTERT can be used in
CC the manufacture of medicaments for inhibiting the effect of ageing or
CC cancer. Inhibitors of telomerase activity can be used to treat conditions
CC that are associated with high telomerase activity. A protein preparation
CC of hTERT can also be used in the new methods
XX
XX SQ Sequence 564 AA;

Query Match 35.0%; Score 2088; DB 2; Length 564;
Best Local Similarity 72.8%; Pred. No. 1.7e-166;
Matches 433; Conservative 12; Mismatches 38; Indels 112; Gaps 7;
Qy 549 MSVYVVELLRSPFFVYVTTTFQKNRLFFYRKSVWSKLSQIGIRHKLKRVQLRELSAEVRQ 608
Db 1 MSVYVVELLRSPFFVYVTTTFQKNRLFFYRKSVWSKLSQIGIRHKLKRVQLRELSAEVRQ 60
Qy 609 HREARPAALLTSLRLEPKDGLRPVNDYVVGARTFREKRAERLTSRVKALFSLVLYE 668
Db 61 HREARPAALLTSLRLEPKDGLRPVNDYVVGARTFREKRAERLTSRVKALFSLVLYE 120
Qy 669 RARRPGLLGASVLGDDIHRARWTFVLRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEV 728
Db 121 RARRPGLLGASVLGDDIHRARWTFVLRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEV 180
Qy 729 IASIIKPNTYCYRRYAVVQKAAGHCHVRKAFKSHVSTLTDLPYMRQFVAHLQETSPLRD 788
Db 181 IASIIKPNTYCYRRYAVVQKAAGHCHVRKAFKSHVSTLTDLPYMRQFVAHLQETSPLRD 210
Qy 789 AVVIEQSSSLNEASSGLFDVFLRFWCHHAVIRGKSVYQCQGI PQGSILSTLLCSLCYGD 848
Db 211 AVVIEQSSSLNEASSGLFDVFLRFWCHHAVIRGKSVYQCQGI PQGSILSTLLCSLCYGD 239

Qy 849 MENKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLTRVGRVPEYGCVMNLKRTVNVFP 908
Db 240 MENKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLTRVGRVPEYGCVMNLKRTVNVFP 299
Qy 909 VEDEALGGTAFVQMPAGHLFPWCGLLDDTRLEVQSDYSSVARTSIRASLTFRNGFKAGR 968
Db 300 VEDEALGGTAFVQMPAGHLFPWCGLLDDTRLEVQSDYSSVARTSIRASLTFRNGFKAGR 359
Qy 969 NMRRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVQLPFFHQVWKN 1028
Db 360 NMRRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVQLPFFHQVWKN 419
Qy 1029 PTFPLRVISDTASLCYSIL-----KAKNAGMSLGAAGNAGP--LPSEAVQ 1071
Db 420 PTFPLRVISDTASLCYSIL-----KAKNAGMSLGAAGNAGP--LPSEAVQ 1071
Qy 1072 WLCHQAFLLKLRHVRVTVPLLSLRTAQTLQSLKPLGTTLTALAAANPALPSD 1126
Db 475 TPCH-----LRATPGVTQDSPPAAESEA-PGD 500

RESULT 71
ADG90605
ID ADG90605 standard; protein; 575 AA.
XX ADG90605;
XX 25-MAR-2004 (first entry)
XX Rat TERT SEQ ID NO.8.
XX rat; immune response; telomerase reverse transcriptase; TERT; cytostatic;
XX immunostimulant; cancer; cytotoxic T cell response.

QY 1 MPAPRCRAVRSLLRSHYREVLPLATFVRRLGQWRLVQRGDPAAFRALVAQCLVCVPW 60
Db |||||
QY 1 MPAPRCRAVRSLLRSHYREVLPLATFVRRLGQWRLVQRGDPAAFRALVAQCLVCVPW 60
Db |||||
QY 61 DARPPPAAPSFRVQSCVKELVARLQRLCERGAKNVLAFGFALLDGCARGGPPPEAFTTSVR 120
Db |||||
QY 61 DARPPPAAPSFRVQSCVKELVARLQRLCERGAKNVLAFGFALLDGCARGGPPPEAFTTSVR 120
Db |||||
QY 121 SYLPNTVTDALRGSGAWGLLRVGGDVLVHLLARCALFVLNAPSAYQVCGPPPLYQLGA 180
Db |||||
QY 121 SYLPNTVTDALRGSGAWGLLRVGGDVLVHLLARCALFVLNAPSAYQVCGPPPLYQLGA 180
Db |||||
QY 181 ATOARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPCARRRGGASRSPLPKRPRR 240
Db |||||
QY 181 ATOARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPCARRRGGASRSPLPKRPRR 240
Db |||||
QY 241 GAAPEPERPVGGGSAHNGRTGSDRGFCVVSPPARPAEEATSLGALSGTRHSHPSVG 300
Db |||||
QY 241 GAAPEPERPVGGGSAHNGRTGSDRGFCVVSPPARPAEEATSLGALSGTRHSHPSVG 300
Db |||||
QY 301 RQHAGPPSTSRPPRPWDTPCPVYAEETKHFLYSSGDKQLRPSFLLS 348
Db |||||
QY 301 RQHAGPPSTSRPPRPWDTPCPVYAEETKHFLYSSGDKQLRPSFLLS 348
Db |||||

RESULT 73

AAW47001

ID AAW47001 standard; protein; 538 AA.

XX AC AAW47001;

XX DT 13-AUG-1998 (first entry)

XX DE Glutathione-S-transferase and hTERT fusion protein 1.

XX KW Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;

XX OS cell proliferation; cancer; ageing; ribonucleoprotein.

XX OS Synthetic.

XX OS Homo sapiens.

XX FH Key Location/Qualifiers

FT Region 1..220

FT /note= "glutathione-S-transferase fragment"

FT Misc-difference 221..226

FT /note= "chrombin cleavage sequence"

FT Misc-difference 227..231

FT /note= "heart muscle protein kinase recognition sequence"

FT Misc-difference 232..236

FT /note= "residues introduced by cloning"

FT Region 237..538

FT /note= "hTERT protein fragment"

XX GB2317891-A.

XX PD 08-APR-1998.

XX PF 01-OCT-1997; 97GB-00020890.

XX PR 01-OCT-1996; 96US-00724643.

XX PR 18-APR-1997; 97US-00844419.

XX PR 25-APR-1997; 97US-00846017.

XX PR 06-MAY-1997; 97US-00851843.

XX PR 09-MAY-1997; 97US-00854050.

XX PR 14-AUG-1997; 97US-00911312.

XX PR 14-AUG-1997; 97US-00912953.

XX PR 14-AUG-1997; 97US-00915503.

XX (GERO-) GERON CORP.

XX PA (UYTE-) UNIV TECHNOLOGY CORP.

XX PI Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;

XX PI Andrews WH;

XX WPI; 1998-171633/16.
XX Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.
XX Example 6; Page 224; 387pp; English.
XX The present sequence represents a fusion protein from an example of the
XX present invention which describes human telomerase reverse transcriptase
CC (hTERT). The present invention also describes the following methods: (A)
CC determining whether a test compound is a modulator of hTERT, by detecting
CC the change in hTERT recombinant protein or polynucleotide, on
CC administration of the compound; (B) preparation of recombinant telomerase
CC by contacting a protein preparation of hTERT with a telomerase RNA
CC component; (C) detection of the hTERT RNA or protein in a sample by
CC binding a relevant probe to the sample and detecting the complex formed
CC or in the case of RNA detection, amplifying the product and correlating
CC the presence of complex or amplification product with presence of hTERT in
CC the sample; and (D) increasing the proliferation of a vertebrate cell by
CC increasing hTERT expression; and (E) the use of an agent that causes an
CC increase in cell vertebrate cell proliferation to create a medicament
CC that inhibits ageing. A protein preparation of hTERT and the
CC polynucleotide encoding hTERT can be used in the manufacture of
CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
CC telomerase activity can be used to treat conditions that are associated
CC with high telomerase activity. A protein preparation of hTERT can also be
CC used in the new methods
XX SQ Sequence 538 AA;
Query Match 25.8%; Score 1538; DB 2; Length 538;
Beat Local Similarity 98.3%; Pred. No. 3.3e-120;
Matches 297; Conservative 2; Mismatches 3; Indels 0; Gaps 0;
QY 831 IPQGSILSTLLCSLCYCGDMENKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRTVRG 890
Db |||||
QY 237 IPQGSILSTLLCSLCYCGDMENKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRTVRG 296
Db |||||
QY 891 VPEYGCVVNLKRTVVNFFVEDEALGGTAFVQMPARGLPWCGLLDDTTLTLEVSQSYSA 950
Db |||||
QY 297 VPEYGCVVNLKRTVVNFFVEDEALGGTAFVQMPARGLPWCGLLDDTTLTLEVSQSYSA 356
Db |||||
QY 951 RTSIRASLTENRKGKAGNMRKLFGLVLRKCHSLFDLQVNSLQTVCTNIIKILLQAY 1010
Db |||||
QY 357 RTSIRASLTENRKGKAGNMRKLFGLVLRKCHSLFDLQVNSLQTVCTNIIKILLQAY 416
Db |||||
QY 1011 RFHACVLQLPFHQVQWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAV 1070
Db |||||
QY 417 RFHACVLQLPFHQVQWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAV 476
Db |||||
QY 1071 QWLCHQAFLLKLTTRHRTVYVPLLSRLTAQTOLSRKLPGLTTLTALEAANPALPSDFKTI 1130
Db |||||
QY 477 QWLCHQAFLLKLTTRHRTVYVPLLSRLTAQTOLSRKLPGLTTLTALEAANPALPSDFKTI 536
Db |||||
QY 1131 LD 1132
Db 537 LD 538
RESULT 74
AAW47004
ID AAW47004 standard; protein; 514 AA.
XX AC AAW47004;
XX DT 13-AUG-1998 (first entry)
XX DE Glutathione-S-transferase and hTERT fusion protein 4.
XX KW Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;

XX Synthetic.
OS Homo sapiens.

XX Key Location/Qualifiers
FT Region 1..220
FT Region /note= "glutathione-S-transferase fragment"
FT Region 237..514
FT Region /note= "hTERT protein fragment"

XX GB2317891-A.
XX 08-APR-1998.

XX 01-OCT-1997; 97GB-00020890.
XX 01-OCT-1996; 96US-00724643.
XX 18-APR-1997; 97US-00844419.
XX 25-APR-1997; 97US-00846017.
XX 06-MAY-1997; 97US-00851843.
XX 09-MAY-1997; 97US-00854050.
XX 14-AUG-1997; 97US-00911312.
XX 14-AUG-1997; 97US-00912951.
XX 14-AUG-1997; 97US-00915503.

XX (GERO-) GERON CORP.
XX (UYTE-) UNIV TECHNOLOGY CORP.

XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
XX Andrews WH;

XX WPI; 1998-171633/16.

XX Pure and recombinant human Telomerase Reverse Transcriptase and its
XX variants - are useful in the diagnosis, prognosis and treatment of cell
XX proliferation conditions especially cancer and ageing.

XX Example 6; Page 226-227; 387pp; English.

XX The present sequence represents a fusion protein from an example of the
XX present invention which describes human telomerase reverse transcriptase
XX (hTERT). The present invention also describes the following methods: (A)
XX determining whether a test compound is a modulator of hTERT, by detecting
XX the change in hTERT recombinant protein or polynucleotide, on
XX administration of the compound; (B) preparation of recombinant telomerase
XX by contacting a protein preparation of hTERT with a telomerase RNA
XX component; (C) detection of the hTERT RNA or protein in a sample by
XX binding a relevant probe to the sample and detecting the complex formed
XX or in the case of RNA detection, amplifying the product and correlating
XX the presence of complex or amplification product with presence of hTERT in
XX the sample; and (D) increasing the proliferation of a vertebrate cell by
XX increasing hTERT expression; and (E) the use of an agent that causes an
XX increase in cell vertebrate cell proliferation to create a medicament
XX that inhibits ageing. A protein preparation of hTERT and the
XX polynucleotide encoding hTERT can be used in the manufacture of
XX medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
XX telomerase activity can be used to treat conditions that are associated
XX with high telomerase activity. A protein preparation of hTERT can also be
XX used in the new methods

XX SQ Sequence 514 AA;

Query Match 25.3%; Score 1506; DB 2; Length 514;
Best Local Similarity 99.6%; Pred. No. 1.5e-117;
Matches 278; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 281 EATSEALSGTRHSHPSVGRQHAGPPSTSRPRPMDTFCPPVYATKHFLYSSGDKEQ 340
:|||||
DB 236 KATSEALSGTRHSHPSVGRQHAGPPSTSRPRPMDTFCPPVYATKHFLYSSGDKEQ 295
:|||||

QY 341 LRPSFLSSLRPSLTGARRLVETIFLGSRPWMFGTPRRRLPRLPQRYWQMRPLFLILGNH 400
:|||||
DB 296 LRPSFLSSLRPSLTGARRLVETIFLGSRPWMFGTPRRRLPRLPQRYWQMRPLFLILGNH 355
:|||||

QY 401 AQCYPGYLLKTHCPRAAVTPAAGVCAREKPGQSVAAPEEEDTDPRLVLQLRHSPWQ 460
:|||||
DB 356 AQCYPGYLLKTHCPRAAVTPAAGVCAREKPGQSVAAPEEEDTDPRLVLQLRHSPWQ 415
:|||||

QY 461 VYGFVRACLRLVPPGILWGRHNRRLNTKKFISLGKHAKLSQLBELTWKMSVRDCAWL 520
:|||||
DB 416 VYGFVRACLRLVPPGILWGRHNRRLNTKKFISLGKHAKLSQLBELTWKMSVRDCAWL 475
:|||||

QY 521 RRSPGVGCVPAABHRLREELAKFLHMLSVYVVVLLRS 559
:|||||
DB 476 RRSPGVGCVPAABHRLREELAKFLHMLSVYVVVLLRS 514
:|||||

RESULT 75

AAO29774

ID AAO29774 standard; protein; 291 AA.

XX AAO29774;

XX 27-AUG-2003 (first entry)

XX hTERT MHC restricted epitope from clone 8.

XX Human; telomerase reverse transcriptase; MHC; tumour-associated antigen;
XX hyperproliferative disease; major histocompatibility complex; hTERT; TAA;
XX immune-mediated disease; systemic lupus erythematosus; protein therapy;
XX Grave's disease; multiple sclerosis; atherosclerosis; cancer; diabetes;
XX Crohn's disease; gene therapy; arthritis; epitope; vaccine; vasculitis;
XX cell therapy.

XX Homo sapiens.

XX Key Location/Qualifiers

XX Region 34..48

XX /note= "MHC-II restricted epitope fragment"

XX Region 133..147

XX /note= "MHC-II restricted epitope fragment"

XX Region 227..241

XX /note= "MHC-II restricted epitope fragment"

XX WO2003038047-A2.

XX 08-MAY-2003.

XX 29-OCT-2002; 2002WO-US034588.

XX 29-OCT-2001; 2001US-0345012P.

XX (BAYU) BAYLOR COLLEGE MEDICINE.

XX Chen S, Zhaoyang Y, Schroers R;

XX WPI; 2003-430511/40.

XX N-PSDB; AAL60416.

XX New human telomerase reverse transcriptase tumor-associated MHC-I or MHC-II restricted polynucleotides and antigens, useful for treating cancers (e.g. lung or bone cancer or lymphomas), Crohn's disease or multiple sclerosis.

XX Claim 3; Fig 2C; 143pp; English.

XX The invention relates to human telomerase reverse transcriptase (hTERT) major histocompatibility complex (MHC)-I or MHC-II restricted tumour-associated antigens (TAA) and polynucleotides encoding such proteins. The invention is useful for treating hyperproliferative diseases such as cancer (e.g. lung cancer, head and neck cancer, pancreatic cancer, breast cancer, prostate cancer, renal cancer, bone cancer, testicular cancer, cervical cancer, gastrointestinal cancer, lymphomas, colon cancer, pre-neoplastic lesions in the lung, melanoma or bladder cancer) or immune-mediated diseases which include arthritis, Crohn's disease, vasculitis, Crohn's disease, multiple sclerosis, atherosclerosis, diabetes, systemic

CC lupus erythematosus etc. The invention is used in gene therapy, protein
 CC therapy, cell therapy and also in the preparation of vaccines. The
 CC present sequence is hTERT MHC class I and II restricted epitope
 XX
 SQ Sequence 291 AA;

Query Match 25.0%; Score 1490; DB 6; Length 291;
 Best Local Similarity 100.0%; Pred. No. 1.5e-116; Indels 0; Gaps 0;
 Matches 291; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 540 ILAKELHLMMSVYVELLSRPFFYVTTTFQKNRLFYFKSVWSKLSQSIGIRQHLKRVQLR 599
 Db 1 ILAKELHLMMSVYVELLSRPFFYVTTTFQKNRLFYFKSVWSKLSQSIGIRQHLKRVQLR 60
 QY 600 ELSEAEVRQHREARALLTSRLRFPKPDGLRPINMDYVVGARTFRREKRAERLTSRVK 659
 Db 61 ELSEAEVRQHREARALLTSRLRFPKPDGLRPINMDYVVGARTFRREKRAERLTSRVK 120
 QY 660 ALFSLVNYERARRPGLLGASVGLDDIHRAWRTFVLVRVRAQDPPPELYFVKVDVTGAYDT 719
 Db 121 ALFSLVNYERARRPGLLGASVGLDDIHRAWRTFVLVRVRAQDPPPELYFVKVDVTGAYDT 180
 QY 720 IPQDLRLTEVIASIIKPONTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAH 779
 Db 181 IPQDLRLTEVIASIIKPONTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAH 240
 QY 780 LQETSPLRDVAVIEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQG 830
 Db 241 LQETSPLRDVAVIEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQG 291

RESULT 76
 AAY43128
 ID AAY43128 standard; protein; 283 AA.
 AC AAY43128;
 DT 20-DEC-1999 (first entry)
 XX Human telomerase reverse transcriptase.
 DE Human telomerase reverse transcriptase.
 KW Human telomerase reverse transcriptase; hTERT; antibody; diagnosis;
 KW telomerase-related disease; cancer.
 XX Homo sapiens.
 OS WO9950407-A1.
 PN 07-OCT-1999.
 PD 26-MAR-1999; 99WO-JP001557.
 PF 26-MAR-1998; 98JP-00098486.
 PR (KYOW) KYOWA HAKKO KOGYO KK.
 PA Hanai N, Yamaaki M, Shibata K, Furuia A, Mikuni O, Anazawa H;
 PI WPI; 1998-591316/50.
 XX New monoclonal antibody recognizing human telomerase catalytic subunit
 PT (hTERT) useful for treating and diagnosing cancer.
 XX Claim 2; Page 72-73; 78pp; Japanese.

XX This sequence represents the human telomerase reverse transcriptase
 CC (hTERT). The invention relates to a monoclonal antibody recognizing the
 CC hTERT. The antibody can be used for the investigation, diagnosis and
 CC treatment of telomerase-related diseases, especially diseases in which
 CC telomerase expression is up-regulated e.g. cancers
 XX Sequence 283 AA;

Query Match 24.2%; Score 1444; DB 2; Length 283;
 Best Local Similarity 100.0%; Pred. No. 1.1e-112;
 Matches 283; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 549 MSYVVVELLSRPFFYVTTTFQKNRLFYFKSVWSKLSQSIGIRQHLKRVQLRSEAEVRQ 608
 Db 1 MSYVVVELLSRPFFYVTTTFQKNRLFYFKSVWSKLSQSIGIRQHLKRVQLRSEAEVRQ 60
 QY 609 HREARPALLTSRLRFPKPDGLRPINMDYVVGARTFRREKRAERLTSRVKALFSLVNYE 668
 Db 61 HREARPALLTSRLRFPKPDGLRPINMDYVVGARTFRREKRAERLTSRVKALFSLVNYE 120
 QY 669 RARRPGLLGASVGLDDIHRAWRTFVLVRVRAQDPPPELYFVKVDVTGAYDTIPQDLRLTEV 728
 Db 121 RARRPGLLGASVGLDDIHRAWRTFVLVRVRAQDPPPELYFVKVDVTGAYDTIPQDLRLTEV 180
 QY 729 IASIIKPONTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAHLOETSPLRD 788
 Db 181 IASIIKPONTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAHLOETSPLRD 240
 QY 789 AVVISQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQGI 831
 Db 241 AVVISQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQGI 283

RESULT 77
 AAW47002
 ID AAW47002 standard; protein; 531 AA.
 AC AAW47002;
 DT 13-AUG-1998 (first entry)
 XX Glutathione-S-transferase and hTERT fusion protein 2.
 DE Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
 KW cell proliferation; cancer; ageing; ribonucleoprotein.
 XX Synthetic.
 OS Homo sapiens.
 XX Key
 FH Region Location/Qualifiers
 FT 1..221
 FT /note= "glutathione-S-transferase fragment"
 FT 249..531
 FT /note= "hTERT protein fragment"
 XX GB2317891-A.
 PN 08-APR-1998.
 PD 01-OCT-1997; 97GB-00020890.
 PF 01-OCT-1996; 96US-00724643.
 PR 18-APR-1997; 97US-00844419.
 PR 25-APR-1997; 97US-00846017.
 PR 06-MAY-1997; 97US-00851843.
 PR 09-MAY-1997; 97US-00854050.
 PR 14-AUG-1997; 97US-00911312.
 PR 14-AUG-1997; 97US-00912951.
 PR 14-AUG-1997; 97US-00915503.
 XX (GERO-) GERON CORP.
 PA (UYTE-) UNIV TECHNOLOGY CORP.

XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
 PI Andrews WH;
 XX WPI; 1998-171633/16.
 XX Pure and recombinant human Telomerase Reverse Transcriptase and its
 PT variants - are useful in the diagnosis, prognosis and treatment of cell
 PT proliferation conditions especially cancer and ageing.

XX Example 6; Page 225; 387pp; English.

XX The present sequence represents a fusion protein from an example of the

CC present invention which describes human telomerase reverse transcriptase

CC (hTERT). The present invention also describes the following methods: (A)

CC determining whether a test compound is a modulator of hTERT, by detecting

CC the change in hTERT recombinant protein or polynucleotide, on

CC administration of the compound; (B) preparation of recombinant telomerase

CC by contacting a protein preparation of hTERT with a telomerase RNA

CC component; (C) detection of the hTERT RNA or protein in a sample by

CC binding a relevant probe to the sample and detecting the complex formed

CC or in the case of RNA detection, amplifying the product and correlating

CC the presence of complex or amplification product with presence of hTERT in

CC the sample; and (D) increasing the proliferation of a vertebrate cell by

CC increasing hTERT expression; and (E) the use of an agent that causes an

CC increase in cell vertebrate cell proliferation to create a medicament

CC that inhibits ageing. A protein preparation of hTERT and the

CC polynucleotide encoding hTERT can be used in the manufacture of

CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of

CC telomerase activity can be used to treat conditions that are associated

CC with high telomerase activity. A protein preparation of hTERT can also be

CC used in the new methods

XX Sequence 531 AA;

Query Match 24.1%; Score 1439; DB 2; Length 531;

Best Local Similarity 92.6%; Pred. No. 6.9e-112;

Matches 287; Conservative 1; Mismatches 16; Indels 6; Gaps 1;

QY 522 RSPGVGCVPAEHLRREIIIAKFLHLMVSVVVELLSFPYVTTTFQKNRLFYRKSVW 581

DB 228 RRASVGSVHHHHHHSVTK-----MSVVVVELLSFPYVTTTFQKNRLFYRKSVW 281

QY 582 SKLQSIGIHOHLKXVQLRELSAEVROHREARPAALLTSRLRFKPDGLPIVNM DYVG 641

DB 282 SKLQSIGIHOHLKXVQLRELSAEVROHREARPAALLTSRLRFKPDGLPIVNM DYVG 341

QY 642 ARTFRREKRAERLTSRKALFVNLVNERARRPGLLGASVLGLDDIHRAWTFVLRVRAQD 701

DB 342 ARTFRREKRAERLTSRKALFVNLVNERARRPGLLGASVLGLDDIHRAWTFVLRVRAQD 401

QY 702 PPPELYPVKVDVTGAYDTIPQDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKS 761

DB 402 PPPELYPVKVDVTGAYDTIPQDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKS 461

QY 762 HVSTLTDLQPMYRQFVAHLQETSPDRDAVIEQSSLSNEASSGLFDVFLRPMCHHAVRIR 821

DB 462 HVSTLTDLQPMYRQFVAHLQETSPDRDAVIEQSSLSNEASSGLFDVFLRPMCHHAVRIR 521

QY 822 GKSYVQCQGI 831

DB 522 GKSYVQCQGI 531

RESULT 78

AAW47005

ID AAW47005 standard; protein; 516 AA.

XX AAW47005;

XX 13-AUG-1998 (first entry)

DT

XX Glutathione-S-transferase and hTERT fusion protein 5.

DE

XX Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;

KW cell proliferation; cancer; ageing; ribonucleoprotein.

XX

OS Synthetic.

OS Homo sapiens.

XX

Key Location/Qualifiers

FT Region 1..220

FT FT /note= "glutathione-S-transferase fragment"

FT 237. .516

XX /note= "hTERT protein fragment"

XX

PN GB2317891-A.

XX

PD 08-APR-1998.

XX

PF 01-OCT-1997; 97GB-00020890.

XX

PR 01-OCT-1996; 96US-00724643.

PR 18-APR-1997; 97US-00844419.

PR 25-APR-1997; 97US-00846017.

PR 06-MAY-1997; 97US-00851843.

PR 09-MAY-1997; 97US-00854050.

PR 14-AUG-1997; 97US-00911312.

PR 14-AUG-1997; 97US-00912951.

PR 14-AUG-1997; 97US-00915503.

XX (GERO-) GERON CORP.

PA (UYTB-) UNIV TECHNOLOGY CORP.

PA

PI Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;

PI Andrews WH;

XX

XX WPI; 1998-171633/16.

XX

XX Pure and recombinant human Telomerase Reverse Transcriptase and its

PT variants - are useful in the diagnosis, prognosis and treatment of cell

PT proliferation conditions especially cancer and ageing.

XX

XX Example 6; Page 227; 387pp; English.

XX

CC The present sequence represents a fusion protein from an example of the

CC present invention which describes human telomerase reverse transcriptase

CC (hTERT). The present invention also describes the following methods: (A)

CC determining whether a test compound is a modulator of hTERT, by detecting

CC the change in hTERT recombinant protein or polynucleotide, on

CC administration of the compound; (B) preparation of recombinant telomerase

CC by contacting a protein preparation of hTERT with a telomerase RNA

CC component; (C) detection of the hTERT RNA or protein in a sample by

CC binding a relevant probe to the sample and detecting the complex formed

CC or in the case of RNA detection, amplifying the product and correlating

CC the presence of complex or amplification product with presence of hTERT in

CC the sample; and (D) increasing the proliferation of a vertebrate cell by

CC increasing hTERT expression; and (E) the use of an agent that causes an

CC increase in cell vertebrate cell proliferation to create a medicament

CC that inhibits ageing. A protein preparation of hTERT and the

CC polynucleotide encoding hTERT can be used in the manufacture of

CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of

CC telomerase activity can be used to treat conditions that are associated

CC with high telomerase activity. A protein preparation of hTERT can also be

CC used in the new methods

XX

SQ Sequence 516 AA;

Query Match 23.8%; Score 1417.5; DB 2; Length 516;

Best Local Similarity 96.8%; Pred. No. 4.3e-110;

Matches 276; Conservative 2; Mismatches 2; Indels 5; Gaps 5;

QY 1 MPRAPRCRAVRSLRSHYREVLPPLATFVRRLGPGQWRVLVQRPAPAFRALVAQCLVCVPW 60

DB 237 MPRAPRCRAVRSLRSHYREVLPPLATFVRRLGPGQWRVLVQRPAPAFRALVAQCLVCVPW 295

QY 61 DARPPPAASFRQVSCLEKELVARVQLRCLERCAGKNVLAFGFALLDGGARGPPEAFTTSVR 120

DB 296 DAR-PPAASFRQVSCLEKELVARVQLRCLERCAGKNVLAFGFALLDGGARGPPEA-FTTSVR 353

QY 121 SYLPTNTVDALRGSGAWGLLRLRVGDDVLVHLARCALFVLVAPSCAYQCGPPLQLGA 180

DB 354 SYLPTNTVDALRGSGAWGLLRLRVGDDVLVHLARCALFVLVAP-CA YQCGPPLQLGA 412

QY 181 ATQARPPPHASGPRRRRLGCERAWNHSVREAGVPLGLPAPGARRRRGSGASRSLPLPKRPR 240

Db 413 ATQARPPPPASGPRRRGLGCERAMNHSVREAGVPLGLPAGARRRGSSASRSLPLPERPR 472
 QY 241 GAAPPERTPVGGSWAHPGRTGSDRGFCVVSAPAEATSL 285
 Db 473 GAAPPERTPVGGSWAHPGRTGSDRGFC-WSPARPAEATSL 516

RESULT 79
 AAW47003
 ID AAW47003 standard; protein; 514 AA.
 AC AAW47003;
 XX
 XX 13-AUG-1998 (first entry)
 XX
 XX Glutathione-S-transferase and hTERT fusion protein 3.
 XX
 XX Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
 KW cell proliferation; cancer; ageing; ribonucleoprotein.
 KW
 XX Synthetic.
 OS Homo sapiens.
 OS
 FH Key Location/Qualifiers
 FT Region 1..220
 FT /note= "glutathione-S-transferase fragment"
 FT Region 238..514
 FT /note= "hTERT protein fragment"
 XX
 XX GB23117891-A.
 XX
 XX 08-APR-1998.
 XX
 XX 01-OCT-1997; 97GB-00020890.
 XX
 XX 01-OCT-1996; 96US-00724643.
 PR 18-APR-1997; 97US-00844419.
 PR 25-APR-1997; 97US-00846017.
 PR 06-MAY-1997; 97US-00851843.
 PR 09-MAY-1997; 97US-00854050.
 PR 14-AUG-1997; 97US-00911312.
 PR 14-AUG-1997; 97US-00912951.
 PR 14-AUG-1997; 97US-00915503.
 XX
 XX (GERO-) GERON CORP.
 XX (UYTE-) UNIV TECHNOLOGY CORP.
 XX
 XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
 PI Andrews WH;
 XX
 XX WPT; 1998-171633/16.
 XX
 XX Pure and recombinant human Telomerase Reverse Transcriptase and its
 PT variants - are useful in the diagnosis, prognosis and treatment of cell
 PT proliferation conditions especially cancer and ageing.
 XX
 XX Example 6; Page 226; 387pp; English.

XX The present sequence represents a fusion protein from an example of the
 XX present invention which describes human telomerase reverse transcriptase
 XX (hTERT). The present invention also describes the following methods: (A)
 XX determining whether a test compound is a modulator of hTERT, by detecting
 XX the change in hTERT recombinant protein or polynucleotide, on
 XX administration of the compound; (B) preparation of recombinant telomerase
 XX by contacting a protein preparation of hTERT with a telomerase RNA
 XX component; (C) detection of the hTERT RNA or protein in a sample by
 XX binding a relevant probe to the sample and detecting the complex formed
 XX or in the case of RNA detection, amplifying the product and correlating
 XX the presence of complex or amplification product with presence of hTERT in
 XX the sample; and (D) increasing the proliferation of a vertebrate cell by
 XX increasing hTERT expression; and (E) the use of an agent that causes an
 XX increase in cell vertebrate cell proliferation to create a medicament

CC that inhibits ageing. A protein preparation of hTERT and the
 CC polynucleotide encoding hTERT can be used in the manufacture of
 CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
 CC telomerase activity can be used to treat conditions that are associated
 CC with high telomerase activity. A protein preparation of hTERT can also be
 CC used in the new methods
 XX
 SQ Sequence 514 AA;
 Query Match 22.3%; Score 1330.5; DB 2; Length 514;
 Best Local Similarity 81.2%; Pred No. 9e-103;
 Matches 286; Conservative 8; Mismatches 35; Indels 23; Gaps 11;
 QY 487 FLRNTHKFKISLGHAKSLQLQELTWKVSVRDCAWLR-----RSPGVGCVPAAEHLRBEI 540
 Db 179 FKKRIEAIPOIDKYLK-SKSYIAWPLQ---GWQATFGGDHPPKSLDVPGRSRAVS 233
 QY 541 LAKFLHMLMSVYVVELLSFFVVTETTFQKNRLLFFYKSVWSKLSIGIRHLLKRVQURE 600
 Db 234 VTK-----MSVYVVELLSFFVVTETTFQKNRLLFFYKSVWSKLSIGIRHLLKRVQURE 288
 QY 601 LSEAEVROH-REARPALITSRLRFPKPDGLRPVNMVYVVGARTFREKRAERLTSRVK 659
 Db 289 LSEA-VROHEREARPALITSRLRFPKPDGLRPVNMVYVVGARTFREKRAERLTSR-K 346
 QY 660 ALFSVLNYERARRPGLLGASVGLDDIHRWRTTFLRVRAQDPPPELYFVKVDVTGAYDT 719
 Db 347 ALFSVLNYERARRPGLLGASVGLDDIHRWRTTFLRVRAQDPPPE-YFVKVDVTGAYDT 405
 QY 720 IPQDLTEVIASIIKPNTYCVRRYAVVQKAHGHVRKAFKSHVSTLTDLPYMRQFVAH 779
 Db 406 IPQDLTEVIASIIKPNTYCVRRY-VQKAHGH-VRAKAFKSHVSTLTDLPYMRQFVAH 463
 QY 780 LQETSPLRDAVVIQSSSLNEASGLFDVFLRFMCHHAVIRGKSYVQCQGI 831
 Db 464 LQETSPLRDAVVIQSSSLNEA-SGLFDVFLRFMCHHAVIRGKSYVQCQGI 514
 RESULT 80
 ADG85224
 ID ADG85224 standard; protein; 250 AA.
 XX
 XX AC ADG85224;
 XX
 XX 11-MAR-2004 (first entry)
 XX
 XX Human telomerase reverse transcriptase.
 DE
 XX telomerase catalytic activity;
 KW hydrogen peroxide-induced cellular senescence; proliferative disease;
 KW cancer; human; telomerase reverse transcriptase; enzyme.
 XX
 OS Homo sapiens.
 XX
 XX US2003225027-A1.
 XX
 XX 04-DEC-2003.
 XX
 XX 30-MAY-2003; 2003US-00449565.
 XX
 XX 31-MAY-2002; 2002US-0384806P.
 PR
 XX (HUAN/) HUANG J.
 XX (HUAN/) HUANG C.
 XX (LINM/) LIN M C M.
 XX (KUNG/) KUNG H.
 XX
 XX Huang JJ, Huang C, Lin MCM, Kung H;
 XX WPI; 2004-089418/09.
 XX N-PSDB; ADG85223.
 XX
 XX New human telomerase reverse transcriptase polypeptide, useful in

PT preparing a composition for treating or preventing proliferative disease,
XX e.g., cancer.
PS Claim 3; SEQ ID NO 2; 38pp; English.
XX
XX The invention relates to a new polypeptide which lacks telomerase
CC catalytic activity or inhibitory effect on telomerase catalytic activity
CC in a cell and has the ability to sensitize HeLa cells to hydrogen
CC peroxide-induced cellular senescence. The polypeptide is useful in
CC preparing a composition for treating or preventing proliferative disease
CC e.g. cancer. The present sequence represents the amino acid sequence of
CC human telomerase reverse transcriptase.
XX
XX Sequence 250 AA;
Query Match 21.7%; Score 1296; DB 8; Length 250;
Best Local Similarity 100.0%; Pred. No. 2.6e-100;
Matches 250; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 883 FLRLVGVPEYGCNVNLRKTVNFPVDEALGTAFAVQMPAHGLPWCGLLDDTRTLEV 942
Db 1 FLRLVGVPEYGCNVNLRKTVNFPVDEALGTAFAVQMPAHGLPWCGLLDDTRTLEV 60
QY 943 QSDYSSYARTSIRASLTFNRFAGRNMRRLFGVLRKCHSLFDLQVNSLQTVCTNIY 1002
Db 61 QSDYSSYARTSIRASLTFNRFAGRNMRRLFGVLRKCHSLFDLQVNSLQTVCTNIY 120
QY 1003 KILLQAYRFHACVQLQPFHQQVKNPTFFLRVISTASLCYSILKAKNAGMSLGAKGAA 1062
Db 121 KILLQAYRFHACVQLQPFHQQVKNPTFFLRVISTASLCYSILKAKNAGMSLGAKGAA 180
QY 1063 GLPSEAVQWLCHQAFLLKLTTRHRTVYVPLLSGLRTAQTLRSKLPQTTLTLEAAANPA 1122
Db 181 GLPSEAVQWLCHQAFLLKLTTRHRTVYVPLLSGLRTAQTLRSKLPQTTLTLEAAANPA 240
QY 1123 LPSDFKTLID 1132
Db 241 LPSDFKTLID 250
RESULT 81
AAW46998
ID AAW46998 standard; protein; 259 AA.
XX
AC AAW46998;
XX
XX 13-AUG-1998 (first entry)
DT
XX Human telomerase reverse transcriptase protein from cDNA clone 712562.
DE
XX Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
KW
XX Homo sapiens.
XX
XX GB2317891-A.
XX
XX 08-APR-1998.
XX
XX 01-OCT-1997; 97GB-00020890.
XX
XX 01-OCT-1996; 96US-00724643.
PR 18-APR-1997; 97US-00844419.
PR 25-APR-1997; 97US-00846017.
PR 06-MAY-1997; 97US-00851843.
PR 09-MAY-1997; 97US-00854050.
PR 14-AUG-1997; 97US-00911312.
PR 14-AUG-1997; 97US-00912951.
PR 14-AUG-1997; 97US-00915503.
XX
XX (GERO-) GERON CORP.
PA (UYTE-) UNIV TECHNOLOGY CORP.
XX

PI Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
PI Andrews WH;
XX
DR WPI; 1998-171633/16.
DR N-PSDB; AAV22379.
XX
XX Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.
XX
XX Example 1; Fig 19; 387pp; English.
PS
XX The present sequence represents a human telomerase reverse transcriptase
CC (hTERT) protein from a cDNA clone from the present invention. The present
CC invention also describes the following methods: (A) determining whether a
CC test compound is a modulator of hTERT, by detecting the change in hTERT
CC recombinant protein or polynucleotide, on administration of the compound;
CC (B) preparation of recombinant telomerase by contacting a protein
CC preparation of hTERT with a telomerase RNA component; (C) detection of the
CC hTERT RNA or protein in a sample by binding a relevant probe to the sample
CC and detecting the complex formed or in the case of RNA detection,
CC amplifying the product and correlating the presence of complex or
CC amplification product with presence of hTERT in the sample; and (D)
CC increasing the proliferation of a vertebrate cell by increasing hTERT
CC expression; and (E) the use of an agent that causes an increase in cell
CC vertebrate cell proliferation to create a medicament that inhibits
CC ageing. A protein preparation of hTERT and the polynucleotide encoding
CC hTERT can be used in the manufacture of medicaments for inhibiting the
CC effect of ageing or cancer. Inhibitors of telomerase activity can be used
CC to treat conditions that are associated with high telomerase activity. A
CC protein preparation of hTERT can also be used in the new methods
XX
XX Sequence 259 AA;
Query Match 18.4%; Score 1096; DB 2; Length 259;
Best Local Similarity 100.0%; Pred. No. 1.9e-83;
Matches 215; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 549 MSVVVVELLSRFPYVTTTFQKNLFFYRKSVMSKLSQIGIRQHLKRVQLRELSEAEVRQ 608
Db 1 MSVVVVELLSRFPYVTTTFQKNLFFYRKSVMSKLSQIGIRQHLKRVQLRELSEAEVRQ 60
QY 609 HREARPALLTSRLRFIPKPDGLRPIVNDYVVGARTFRREKRAERLTSTRVKALFSLVNYE 668
Db 61 HREARPALLTSRLRFIPKPDGLRPIVNDYVVGARTFRREKRAERLTSTRVKALFSLVNYE 120
QY 669 RARRPGLLGASVLGLDDIHRARWTFVLVRQAQPPPELYFVKVDVTGAYDTIPQDRLTEV 728
Db 121 RARRPGLLGASVLGLDDIHRARWTFVLVRQAQPPPELYFVKVDVTGAYDTIPQDRLTEV 180
QY 729 IASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHV 763
Db 181 IASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHV 215
RESULT 82
AAO29775
ID AAO29775 standard; protein; 174 AA.
XX
AC AAO29775;
XX
XX 27-AUG-2003 (first entry)
DT
XX hTERT MHC restricted epitope from clone 35.
DE
XX Human; telomerase reverse transcriptase; MHC; tumour-associated antigen;
KW hyperproliferative disease; major histocompatibility complex; hTERT; TAA;
KW immune-mediated disease; systemic lupus erythematosus; protein therapy;
KW Grave's disease; multiple sclerosis; atherosclerosis; cancer; diabetes;
KW Crohn's disease; gene therapy; arthritis; epitope; vaccine; vasculitis;
KW cell therapy.
XX
XX Homo sapiens.
OS

XX FH Key Location/Qualifiers
XX FT 50..64
XX FT /note= "MHC-II restricted epitope fragment"
XX FT Region
XX FT 86..100
XX FT /note= "MHC-II restricted epitope fragment"
XX FT Misc-difference 173..174
XX FT /note= "Encoded by AAG"
XX FN WO2003038047-A2.
XX PD 08-MAY-2003.
XX PF 29-OCT-2002; 2002WO-US034588.
XX PR 29-OCT-2001; 2001US-0345012P.
XX PA (BAYU) BAYLOR COLLEGE MEDICINE.
XX PI Chen S, ZhaoYang Y, Schroers R;
XX DR WPI; 2003-430511/40.
XX DR N-PSDB; AAL60417.
XX CC New human telomerase reverse transcriptase tumor-associated MHC-I or MHC-II restricted polynucleotides and antigens, useful for treating cancers (e.g. lung or bone cancer or lymphomas), Crohn's disease or multiple sclerosis.
XX PS Claim 5; Fig 2C; 143pp; English.
XX CC The invention relates to human telomerase reverse transcriptase (hTERT) major histocompatibility complex (MHC)-I and MHC-II restricted tumor-associated antigens (TAA) and polynucleotides encoding such proteins. The invention is useful for treating hyperproliferative diseases such as cancer (e.g. lung cancer, head and neck cancer, pancreatic cancer, breast cancer, prostate cancer, renal cancer, bone cancer, testicular cancer, cervical cancer, gastrointestinal cancer, lymphomas, colon cancer, pre-neoplastic lesions in the lung, melanoma or bladder cancer) or immune-mediated diseases which include arthritis, Crohn's disease, vasculitis, Grave's disease, multiple sclerosis, atherosclerosis, diabetes, systemic lupus erythematosus etc. The invention is used in gene therapy, protein therapy, cell therapy and also in the preparation of vaccines. The present sequence is hTERT MHC class I and II restricted epitope
XX SQ Sequence 174 AA;
Query Match 15.2%; Score 905; DB 6; Length 174;
Best Local Similarity 100.0%; Pred. No. 1.3e-67;
Matches 174; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 831 IPOGSLTLCLSLCYGDMENKLFAGIRRDGLLRLLVDDFLVTPHLTHAKTFLRTLVRG 890
Db 1 IPOGSLTLCLSLCYGDMENKLFAGIRRDGLLRLLVDDFLVTPHLTHAKTFLRTLVRG 60
QY 891 VPEYGCVMNLKTVNFPVEDEALGCTAFVQMPAHGLFPWCGLLLTTRTLEVQSDYSVA 950
Db 61 VPEYGCVMNLKTVNFPVEDEALGCTAFVQMPAHGLFPWCGLLLTTRTLEVQSDYSVA 120
QY 951 RTSIRASLTFNPGFKAGNMRRLKFGVLRKCHSLFELDQVNSLQVCTNIYKI 1004
Db 121 RTSIRASLTFNPGFKAGNMRRLKFGVLRKCHSLFELDQVNSLQVCTNIYKI 174
RESULT 83
AAE00431
ID AAE00431 standard; protein; 379 AA.
XX AC AAE00431;
XX AC
DT 19-JUN-2001 (first entry)
XX FT
DE Consensus sequence of telomerase reverse transcriptase (TERT) protein.

XX KW Telomerase reverse transcriptase; TERT; ever shorter telomere; EST;
XX KW therapy; stomach cancer; malaria; vaginal candidiasis.
XX OS Unidentified.
XX FH Key Location/Qualifiers
XX FT Misc-difference 1 /label= Unknown
XX FT Misc-difference 5 /label= Unknown
XX FT Misc-difference 6 /label= Unknown
XX FT Misc-difference 7 /label= Unknown
XX FT Misc-difference 11 /label= Unknown
XX FT Misc-difference 13 /label= Unknown
XX FT Misc-difference 14 /label= Unknown
XX FT Misc-difference 19 /label= Unknown
XX FT Misc-difference 21 /label= Unknown
XX FT Misc-difference 22 /label= Unknown
XX FT Misc-difference 23 /label= Unknown
XX FT Misc-difference 26 /label= Unknown
XX FT Misc-difference 31 /label= Unknown
XX FT Misc-difference 34 /label= Unknown
XX FT Misc-difference 39 /label= Unknown
XX FT Misc-difference 40 /label= Unknown
XX FT Misc-difference 44 /label= Unknown
XX FT Misc-difference 61 /label= Unknown
XX FT Misc-difference 65 /label= Unknown
XX FT Misc-difference 73 /label= Unknown
XX FT Misc-difference 79 /label= Unknown
XX FT Misc-difference 91 /label= Unknown
XX FT Misc-difference 95 /label= Unknown
XX FT Misc-difference 108 /label= Unknown
XX FT Misc-difference 109 /label= Unknown
XX FT Misc-difference 110 /label= Unknown
XX FT Misc-difference 111 /label= Unknown
XX FT Misc-difference 112 /label= Unknown
XX FT Misc-difference 121 /label= Unknown
XX FT Misc-difference 122 /label= Unknown
XX FT Misc-difference 124 /label= Unknown
XX FT Misc-difference 127 /label= Unknown
XX FT Misc-difference 130 /label= Unknown
XX FT Misc-difference 130 /label= Unknown

FT Misc-difference 131 /label= Unknown
FT Misc-difference 133 /label= Unknown
FT Misc-difference 135 /label= Unknown
FT Misc-difference 146 /label= Unknown
FT Misc-difference 156 /label= Unknown
FT Misc-difference 158 /label= Unknown
FT Misc-difference 166 /label= Unknown
FT Misc-difference 171 /label= Unknown
FT Misc-difference 173 /label= Unknown
FT Misc-difference 176 /label= Unknown
FT Misc-difference 179 /label= Unknown
FT Misc-difference 182 /label= Unknown
FT Misc-difference 185 /label= Unknown
FT Misc-difference 188 /label= Unknown
FT Misc-difference 195 /label= Unknown
FT Misc-difference 196 /label= Unknown
FT Misc-difference 197 /label= Unknown
FT Misc-difference 198 /label= Unknown
FT Misc-difference 199 /label= Unknown
FT Misc-difference 200 /label= Unknown
FT Misc-difference 201 /label= Unknown
FT Misc-difference 204 /label= Unknown
FT Misc-difference 207 /label= Unknown
FT Misc-difference 208 /label= Unknown
FT Misc-difference 209 /label= Unknown
FT Misc-difference 217 /label= Unknown
FT Misc-difference 218 /label= Unknown
FT Misc-difference 221 /label= Unknown
FT Misc-difference 225 /label= Unknown
FT Misc-difference 237 /label= Unknown
FT Misc-difference 243 /label= Unknown
FT Misc-difference 253 /label= Unknown
FT Misc-difference 254 /label= Unknown
FT Misc-difference 257 /label= Unknown
FT Misc-difference 258 /label= Unknown
FT Misc-difference 260 /label= Unknown
FT Misc-difference 263 /label= Unknown

FT Misc-difference 272 /label= Unknown
FT Misc-difference 273 /label= Unknown
FT Misc-difference 277 /label= Unknown
FT Misc-difference 300 /label= Unknown
FT Misc-difference 304 /label= Unknown
FT Misc-difference 311 /label= Unknown
FT Misc-difference 325 /label= Unknown
FT Misc-difference 326 /label= Unknown
FT Misc-difference 327 /label= Unknown
FT Misc-difference 332 /label= Unknown
FT Misc-difference 335 /label= Unknown
FT Misc-difference 340 /label= Unknown
FT Misc-difference 342 /label= Unknown
FT Misc-difference 343 /label= Unknown
FT Misc-difference 344 /label= Unknown
FT Misc-difference 352 /label= Unknown
FT Misc-difference 361 /label= Unknown
FT Misc-difference 362 /label= Unknown
FT Misc-difference 364 /label= Unknown
FT Misc-difference 367 /label= Unknown
XX WO200127287-A2.
PN
XX
PD 19-APR-2001.
XX
PF 10-OCT-2000; 2000WO-US027825.

Query Match 12.0%; Score 713; DB 4; Length 379;
Best Local Similarity 39.3%; Pred. NO. 5.8e-51;
Matches 194; Conservative 31; Mismatches 137; Indels 132; Gaps 13;
Qy 451 LLROHSSPMQVYGFVACLRRLVPPGLWGSRRNERFLNTKKFISLGKAKLSLOELTW 510
Db 15 LLSYXSXXXQVNFLEXILXKLVPXXLWXGRHNKKIFLXNKKFL-LXKYEXLSLOELMX 73
Qy 511 KMSVRDCAWLRRSPGVCVPAABHRLREILAKFLHMLMSVYVVELLRSPFYVTTTFOK 570
Db 74 KIKVR-----XILAKFLWLDXLVVLLRSEFYITETXXX 110
Qy 571 NRLFYRKSVMSKLOSIGIROHLKRVOLRELSAEVROHREARPALLTSLRFPKP-DG 629
Db 111 XXLFYYRK-IWXXLXRIFFIXLXK-XLRELQKEVR-----XGKLRLLPKKXTX 158
Qy 630 LRPVNMVYVGARTFRREKRAERLTSRVKALPSVLNYERARRPGLLGASVLGLDDIHRA 689
Db 159 FRPVMNKRKVRXKXKMTXNQXL---VXTLXMLKXKXXXXXXXLXSVXXXXDDIMRR 215
Qy 690 WRTFVLVRQAQPPPELYFVKVDVTGAYDTIPQDRLTEVIASLIKQNTYCVRRYAVVQK 749
Db 216 WXXFVXKWRX----PKLYFVKVDIKCYDTITXQDRLVRVLKXKIK----- 256
Qy 750 AAHGHVRKAFKSHVSTLTDLPQYMRQFVAHLQETSPLRDAVVTEQSSSLNEASSGLPDMF 809

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Db 257 -----XXEXSLXRDSVVIRQX----- 272
QY 810 LRFMCHAVIRGKSYVOCQIGPOGSSILSTLCSLCYCDMENKLFAG-IRRDGILLRLVD 868
Db 273 -----XYKQXKGIPOGSSLSTLCSLYYGDLEEXEYXQFLRRDXLLRLVD 318
QY 869 DFLVTPHLTHAKTFLRLVR-GVPEYGCVVNLKRTVVNFVEDEALGGTAFVOMPAHGL 927
Db 319 DFLITXXXNNAKFLXLLVRXGXXYGFKNLXKTVNPF-----QMXHXL 365
QY 928 FPCGGLLDRTLE 941
Db 366 MXWIGLSIDIRTLE 379

RESULT 84
ABB99681
ID ABB99681 standard; protein; 174 AA.
XX
AC ABB99681;
XX
DT 28-MAR-2003 (first entry)
XX
DE Splice variant of a human telomerase reverse transcriptase fragment.
XX
KW Human; telomerase reverse transcriptase; hTERT; T cell response; vaccine;
KW cancer.
XX
OS Homo sapiens.
XX
FN WO200294312-A1.
XX
PD 28-NOV-2002.
XX
PF 16-MAY-2002; 2002WO-NO000176.
XX
PR 21-MAY-2001; 2001GB-00012342.
XX
PA (GEMV-) GEMVAX AS.
XX
PI Eriksen JA, Gaudernack G, Moller M, Saeboe-Larsen S;
XX
DR WPI; 2003-129380/12.
XX
CC The present sequence represents a splice variant of a fragment of human
CC telomerase reverse transcriptase (hTERT). The specification describes
CC peptides derived from hTERT, which are capable of inducing a T cell
CC response and are used in medicine. The hTERT peptides and nucleic acids
CC encoding them are useful in preparing a medicament, which is a vaccine.
CC an antisense molecule, or is capable of generating an antisense molecule
CC in vivo, for treating cancer, or in preparing a diagnostic for diagnosing
CC cancer. The cancer is, for example, breast cancer, prostate cancer,
CC pancreatic cancer, colo-rectal cancer, lung cancer, malignant melanoma,
CC leukemia, lymphoma, ovarian cancer, cervical cancer, or a biliary tract
CC carcinoma
XX
SQ Sequence 174 AA;

Query Match 11.2%; Score 667; DB 6; Length 174;
Best Local Similarity 100.0%; Pred. No. 1.4e-47;
Matches 130; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 634 VNMDYVVGARTFRREKRAERLTSRVKALFSLVNLNERARPGILGASVLGLDDIHRWRTF 693
Db 1 VNMDYVVGARTFRREKRAERLTSRVKALFSLVNLNERARPGILGASVLGLDDIHRWRTF 60
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QY 694 VLVVRAODPPPELYFKVVDVTGAYDTIPQDRLTEVIASIIKQNTYCVRRYAVVQKAHG 753
Db 61 VLVVRAODPPPELYFKVVDVTGAYDTIPQDRLTEVIASIIKQNTYCVRRYAVVQKAHG 120
QY 754 HVRKAFKSHV 763
Db 121 HVRKAFKSHV 130

RESULT 85
AAW97385
ID AAW97385 standard; protein; 131 AA.
XX
AC AAW97385;
XX
DT 14-MAY-1999 (first entry)
XX
DE Amino acid sequence of the specification.
XX
KW Catalytic telomerase; diagnosis; disease; telomerase activity.
XX
OS Homo sapiens.
XX
FN JP11046768-A.
XX
PD 23-FEB-1999.
XX
PF 01-AUG-1997; 97JP-00207708.
XX
PR 01-AUG-1997; 97JP-00207708.
XX
PA (MITU ) MITSUBISHI CHEM CORP.
XX
DR WPI; 1999-208111/18.
DR N-PSDB; AAX15924.
XX
PT New catalytic protein of telomerase of a higher animal and a gene coding
PT it - useful for diagnosis of diseases caused by the change in activity of
PT a telomerase.
XX
PS Example 1; Page 14; 18pp; Japanese.
XX
CC The specification describes a human catalytic telomerase protein. The
CC products are useful in drug compositions for the diagnosis of diseases
CC caused by the change in activity of telomerase. The present sequence
CC appears in the specification
XX
SQ Sequence 131 AA;

Query Match 10.9%; Score 651; DB 2; Length 131;
Best Local Similarity 98.5%; Pred. No. 2.1e-46;
Matches 128; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 542 AKFLHMLMSVVVVELLSRFFVVTTFQKNLFFVRKSVWSKLOSIGIROHLKRVQLREL 601
Db 1 AKFLHMLMSVVVVELLSRFFVVTTFQKNLFFVRKSVWSKLOSIGIROHLKRVQLRDV 60
QY 602 SEAEVRQHREARPAALLTSRLRFIPKPDGLRPVNMVYVVGARTFRREKRAERLTSRVKAL 661
Db 61 SEAEVRQHREARPAALLTSRLRFIPKPDGLRPVNMVYVVGARTFRREKRAERLTSRVKAL 120
QY 662 FSVLNYERAR 671
Db 121 FSVLNYERAR 130

RESULT 86
AAW56107
ID AAW56107 standard; protein; 988 AA.
XX
AC AAW56107;
XX
```


DE HIV RT/hTERT chimeric construct #16.
XX
KW cytostatic; gene therapy; reverse transcriptase-Inhibitor; HIV-1;
KW human telomerase reverse transcriptase; hTERT; chimeric; catalytic site;
KW unregulated cellular growth; cancer; tumor.
XX
OS Chimeric.
OS Homo sapiens.
OS Human immunodeficiency virus 1.
XX
PN WO2003095605-A2.
XX
PD 20-NOV-2003.
XX
PF 14-APR-2003; 2003WO-EP003874.
XX
PR 08-MAY-2002; 2002US-0378820P.
XX
PA (PHAA) PHARMACIA ITAL SPA.
XX
PI Moll J, Schnuchel A, Stouten P;
XX
DR WPI; 2004-012095/01.
XX
XX New HIV-1 Reverse Transcriptase and human Telomerase Reverse
PT Transcriptase proteins and nucleic acids, useful in gene therapy or for
PT treating or preventing unregulated cellular growth, e.g. cancer cell or
PT tumor growth.
XX
PS Claim 1; SEQ ID NO 25; 141pp; English.
XX
CC The invention relates to the isolation of compounds that bind and inhibit
CC the activity of HIV-1 reverse transcriptase (RT) or human telomerase
CC reverse transcriptase (hTERT). The method involves determining these
CC compounds using a HIV-1 RT/hTERT chimeric construct containing the
CC catalytic sites of each enzyme. The nucleic acid is useful for treating
CC or preventing unregulated cellular growth, including cancer cell and
CC tumor growth. It is also useful in gene therapy. Compounds that inhibit
CC telomerase activity can be used to treat cancer. The vectors of the
CC invention can be used to amplify DNA or RNA encoding HIV-RT/hTERT and/or
CC express DNA which encodes HIV-RT/hTERT. This sequence corresponds to a
CC chimeric HIV-RT/hTERT protein construct.
XX
SQ Sequence 816 AA;
Query Match 9.5%; Score 565; DB 8; Length 816;
Best Local Similarity 43.9%; Pred. No. 4.9e-38;
Matches 143; Conservative 14; Mismatches 33; Indels 136; Gaps 11;
QY 624 IPKPDGLRPVNDYVVGARTFRR-EKRAERLTSRVKALFSLVLYERARRPGLLGASVLG 682
Db 303 IDKPDGLRLKLV-----FRELNRKTQDF----- 325
QY 683 LDDIHRARWTFVLVRRAQDPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKQNTYCVR 742
Db 326 -----WRTFVLVRRAQDPPELYFVKVDVTGAYDTIPWDE-----DPR 363
QY 743 RYAVVQKAAGHGVKAFKSHVSTLTLQPYMRQFVAHLQETSPLRDAVAVIEQSSSLNEAS 802
Db 364 KYT-----AF-----TIP-----SINET 377
QY 803 SGLFDVFLRFMCHAVIRKSVVQCGIPQ-----SILSTLLCSLCYGD MENKLPAGI 857
Db 378 PG-----IRY-----QYNVLPQGWKGSFAIFQSSMTKIL-----EPFKKQ 412
QY 858 RRDGLLLRLVDVDFLLVTPHLTHAKTFLRTLVRGVPEYGCVNLRKTVNFPVEDEALGTT 917
Db 413 NPDIILLRLVDVDFLLVTPHLTHAKTFLRTLVRGVPEYGCVNLRKTVNFPVEDEALGTT 472
QY 918 AFVQMPAHGLFPCWCGLLDTRTLEVQ 943
Db 473 AFVQMPAHGLFPCWCGLLDTRTLEVQ 498

RESULT 88
ADG70131
ID ADG70131 standard; protein; 586 AA.
XX
AC ADG70131;
XX
DT 11-MAR-2004 (first entry)
XX
DE HIV RT/hTERT chimeric construct #12.
XX
KW cytostatic; gene therapy; reverse transcriptase-Inhibitor; HIV-1;
KW human telomerase reverse transcriptase; hTERT; chimeric; catalytic site;
KW unregulated cellular growth; cancer; tumor.
XX
OS Chimeric.
OS Homo sapiens.
OS Human immunodeficiency virus 1.
XX
PN WO2003095605-A2.
XX
PD 20-NOV-2003.
XX
PF 14-APR-2003; 2003WO-EP003874.
XX
PR 08-MAY-2002; 2002US-0378820P.
XX
PA (PHAA) PHARMACIA ITAL SPA.
XX
PI Moll J, Schnuchel A, Stouten P;
XX
DR WPI; 2004-012095/01.
XX
XX New HIV-1 Reverse Transcriptase and human Telomerase Reverse
PT Transcriptase proteins and nucleic acids, useful in gene therapy or for
PT treating or preventing unregulated cellular growth, e.g. cancer cell or
PT tumor growth.
XX
PS Claim 1; SEQ ID NO 21; 141pp; English.
XX
CC The invention relates to the isolation of compounds that bind and inhibit
CC the activity of HIV-1 reverse transcriptase (RT) or human telomerase
CC reverse transcriptase (hTERT). The method involves determining these
CC compounds using a HIV-1 RT/hTERT chimeric construct containing the
CC catalytic sites of each enzyme. The nucleic acid is useful for treating
CC or preventing unregulated cellular growth, including cancer cell and
CC tumor growth. It is also useful in gene therapy. Compounds that inhibit
CC telomerase activity can be used to treat cancer. The vectors of the
CC invention can be used to amplify DNA or RNA encoding HIV-RT/hTERT and/or
CC express DNA which encodes HIV-RT/hTERT. This sequence corresponds to a
CC chimeric HIV-RT/hTERT protein construct.
XX
SQ Sequence 586 AA;
Query Match 9.3%; Score 555; DB 8; Length 586;
Best Local Similarity 43.6%; Pred. No. 2.1e-37;
Matches 142; Conservative 14; Mismatches 34; Indels 136; Gaps 11;
QY 624 IPKPDGLRPVNDYVVGARTFRR-EKRAERLTSRVKALFSLVLYERARRPGLLGASVLG 682
Db 73 IDKPDGLRLKLV-----FRELNRKTQDF----- 95
QY 683 LDDIHRARWTFVLVRRAQDPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKQNTYCVR 742
Db 96 -----WRTFVLVRRAQDPPELYFVKVDVTGAYDTIPWDE-----DPR 133
QY 743 RYAVVQKAAGHGVKAFKSHVSTLTLQPYMRQFVAHLQETSPLRDAVAVIEQSSSLNEAS 802
Db 134 KYT-----AF-----TIP-----SINET 147
QY 803 SGLFDVFLRFMCHAVIRKSVVQCGIPQ-----SILSTLLCSLCYGD MENKLPAGI 857
Db 148 PG-----IRY-----QYNVLPQGWKGSFAIFQSSMTKIL-----EPFKKQ 182

QY 858 RDGGLRLVDDFLVTPHLLTHAKTFLRTLVRGVEYGVNLRKTVNPFVEDEALGGT 917
 Db 183 NPDILLRLVDDFLVTPHLLTHAKTFLRTLVRGVEYGVNLRKTVNPFVEDEALGGT 242
 QY 918 AFVQMPAHGLFPWCGLLDTRTLEVQ 943
 Db 243 AFVQMPAHGLFPWCGLLDTRTLEVQ 268

RESULT 89
 ADG70134
 ID ADG70134 standard; protein; 803 AA.
 XX AC ADG70134;
 XX DT 11-MAR-2004 (first entry)
 XX DE HIV RT/hTERT chimeric construct #15.
 XX cytosatic; gene therapy; reverse transcriptase-Inhibitor; HIV-1;
 KW human telomerase reverse transcriptase; hTERT; chimeric; catalytic site;
 KW unregulated cellular growth; cancer; tumor.
 XX OS Chimeric.
 OS Homo sapiens.
 OS Human immunodeficiency virus 1.
 XX PN WO2003095605-A2.
 XX PD 20-NOV-2003.
 XX PF 14-APR-2003; 2003WO-EP003874.
 XX PR 08-MAY-2002; 2002US-0378820P.
 XX PA (PHAA) PHARMACIA ITAL SPA.
 XX PI Moll J, Schnuchel A, Stouten P;
 XX WPI; 2004-012095/01.
 XX New HIV-1 Reverse Transcriptase and human Telomerase Reverse
 PT Transcriptase proteins and nucleic acids, useful in gene therapy or for
 PT treating or preventing unregulated cellular growth, e.g. cancer cell or
 PT tumor growth.
 XX Claim 1; SEQ ID NO 24; 141pp; English.

CC The invention relates to the isolation of compounds that bind and inhibit
 CC the activity of HIV-1 reverse transcriptase (RT) or human telomerase
 CC reverse transcriptase (hTERT). The method involves determining these
 CC compounds using a HIV-1 RT/hTERT chimeric construct containing the
 CC catalytic sites of each enzyme. The nucleic acid is useful for treating
 CC or preventing unregulated cellular growth, including cancer cell and
 CC tumor growth. It is also useful in gene therapy. Compounds that inhibit
 CC telomerase activity can be used to treat cancer. The vectors of the
 CC invention can be used to amplify DNA or RNA encoding HIV-RT/hTERT and/or
 CC express DNA which encodes HIV-RT/hTERT. This sequence corresponds to a
 CC chimeric HIV-RT/hTERT protein construct.
 XX SQ Sequence 803 AA;

Query Match 9.3%; Score 555; DB 8; Length 803;
 Best Local Similarity 43.6%; Pred. No. 3.4e-37;
 Matches 142; Conservative 14; Mismatches 34; Indels 136; Gaps 11;

QY 624 IPKPDGLRPVNMDDVVGARTFRR-EKRAERLTSRKALFSLVNLNRYARRPGLLGASVLG 682
 Db 290 IDKPDGLRLVD-----FRELNRQTQDF----- 312
 QY 683 LDDIHRARFTFLVRADPPPELYFVKVDVTGAYDTIPQDRLTEVIASIKPQNTYCVR 742

Db 313 -----WRTFVLVRADPPPELYFVKVDVTGAYDTIPWDE-----DPR 350
 QY 743 RYAVVQXAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHLQETSPLRDAVVIQSSSLNEAS 802
 Db 351 KYT-----AF-----TIP-----SINNET 364
 QY 803 SGLFDVFLRFMCHHAVIRKSVVQCQIPQG-----SILSTLLCSLCYGDMEKNLFAGI 857
 Db 365 PG-----IRY-----QYNVLPGWKGSIPAIFQSSMTKIL-----EPFKKQ 399
 QY 858 RRDGLLRVDDFLVTPHLLTHAKTFLRTLVRGVEYGVNLRKTVNPFVEDEALGGT 917
 Db 400 NPDILLRLVDDFLVTPHLLTHAKTFLRTLVRGVEYGVNLRKTVNPFVEDEALGGT 459
 QY 918 AFVQMPAHGLFPWCGLLDTRTLEVQ 943
 Db 460 AFVQMPAHGLFPWCGLLDTRTLEVQ 485

RESULT 90

ADG70133
 ID ADG70133 standard; protein; 816 AA.
 XX AC ADG70133;
 XX DT 11-MAR-2004 (first entry)
 XX DE HIV RT/hTERT chimeric construct #14.
 XX cytosatic; gene therapy; reverse transcriptase-Inhibitor; HIV-1;
 KW human telomerase reverse transcriptase; hTERT; chimeric; catalytic site;
 KW unregulated cellular growth; cancer; tumor.
 XX OS Chimeric.
 OS Homo sapiens.
 OS Human immunodeficiency virus 1.
 XX PN WO2003095605-A2.
 XX PD 20-NOV-2003.
 XX PF 14-APR-2003; 2003WO-EP003874.
 XX PR 08-MAY-2002; 2002US-0378820P.
 XX PA (PHAA) PHARMACIA ITAL SPA.
 XX PI Moll J, Schnuchel A, Stouten P;
 XX WPI; 2004-012095/01.
 XX New HIV-1 Reverse Transcriptase and human Telomerase Reverse
 PT Transcriptase proteins and nucleic acids, useful in gene therapy or for
 PT treating or preventing unregulated cellular growth, e.g. cancer cell or
 PT tumor growth.
 XX Example 1; SEQ ID NO 23; 141pp; English.

CC The invention relates to the isolation of compounds that bind and inhibit
 CC the activity of HIV-1 reverse transcriptase (RT) or human telomerase
 CC reverse transcriptase (hTERT). The method involves determining these
 CC compounds using a HIV-1 RT/hTERT chimeric construct containing the
 CC catalytic sites of each enzyme. The nucleic acid is useful for treating
 CC or preventing unregulated cellular growth, including cancer cell and
 CC tumor growth. It is also useful in gene therapy. Compounds that inhibit
 CC telomerase activity can be used to treat cancer. The vectors of the
 CC invention can be used to amplify DNA or RNA encoding HIV-RT/hTERT and/or
 CC express DNA which encodes HIV-RT/hTERT. This sequence corresponds to a
 CC chimeric HIV-RT/hTERT protein construct.
 XX SQ Sequence 816 AA;

Query Match

9.3%; Score 555; DB 8; Length 816;

Best Local Similarity 43.6%; Pred. No. 3.4e-37;
Matches 142; Conservative 14; Mismatches 34; Indels 136; Gaps 11;
QY 624 IKPKDGLRIVNMDYVGARTFR-EKRAERLTSRVKALFSLVNLVERARRPGLLGASVLG 682
Db 303 IKPKDGLRLVD-----FRELNRKTQDF----- 325
QY 683 LDDIHRAMRTFVLVRAQDPPELFFVKVDVTGAYDTIPQDLRTVEVIASIIKPONTVCVR 742
Db 326 -----WRTFVLVRAQDPPELFFVKVDVTGAYDTIPWDE-----DFR 363
QY 743 RVAVQKAAMHVRKAFKSHVSTLTDLPYMRQFVAHLQETSPRLDAVVIRQSSSLNEAS 802
Db 364 KYT-----AF-----TIP-----SINNET 377
QY 803 SGLFDVFLRECHHAVIRGKSYVQCIGIPOG-----SILSTLCSLCYGDMEKNLFAGI 857
Db 378 FG-----TRY-----QYNVLPQGWKSPAFQSSMTKIL-----EPFKKQ 412
QY 858 RRDGLLRVDDFLVTPHLTHAKTFLRLVRGVPEYGVNLRKTVNPFVDEALGGT 917
Db 413 NPDILLRLVDDFLVTPHLTHAKTFLRLVRGVPEYGVNLRKTVNPFVDEALGGT 472
QY 918 AFVQMPAHGLFPWCGLLDDTTLVEQ 943
Db 473 AFVQMPAHGLFPWGLLDDTTLVEQ 498

RESULT 91
ABB99682
ID ABB99682 standard; protein; 108 AA.
XX ABB99682;
AC ABB99682;
DT 28-MAR-2003 (first entry)
XX
DE Splice variant of a human telomerase reverse transcriptase fragment.
XX Human; telomerase reverse transcriptase; hTERT; T cell response; vaccine;
KW cancer.
XX Homo sapiens.
XX WO200294312-A1.
XX 28-NOV-2002.
XX 16-MAY-2002; 2002WO-NO000176.
XX 21-MAY-2001; 2001GB-00012342.
XX (GEMV-) GEMVAX AS.
XX Eriksen JA, Gaudernack G, Moller M, Saeboe-Larsen S;
XX WPI; 2003-129380/12.

New polypeptides derived from human telomerase reverse transcriptase,
PT useful in preparing a medicament for treating or preventing cancer, or in
PT preparing a diagnostic for diagnosing cancer, e.g. breast cancer or
XX prostate cancer.
XX Disclosure; Fig 2; 56pp; English.
XX
CC The present sequence represents a splice variant of a fragment of human
CC telomerase reverse transcriptase (hTERT). The specification describes
CC peptides derived from hTERT, which are capable of inducing a T cell
CC response and are used in medicine. The hTERT peptides and nucleic acids
CC encoding them are useful in preparing a medicament, which is a vaccine,
CC an antisense molecule, or is capable of generating an antisense molecule
CC in vivo, for treating cancer, or in preparing a diagnostic for diagnosing
CC cancer. The cancer is, for example, breast cancer, prostate cancer,
CC pancreatic cancer, colo-rectal cancer, lung cancer, malignant melanoma,

CC leukemia, lymphoma, ovarian cancer, cervical cancer, or a biliary tract
CC carcinoma
XX
SQ Sequence 108 AA;
Query Match 9.0%; Score 535; DB 6; Length 108;
Best Local Similarity 90.0%; Pred. No. 9.5e-37;
Matches 108; Conservative 0; Mismatches 0; Indels 12; Gaps 1;
QY 634 VNMDYVVGARTFRREKRAERLTSRVKALFSLVNLVERARRPGLLGASVLGDDIHRAWRTF 693
Db 1 VNMDYVVGARTFRREKRAERLTSRVKALFSLVNLVERARRPGLLGASVLGDDIHRAWRTF 60
QY 694 VLRVRAQDPPELFFVKVDVTGAYDTIPQDLRTVEVIASIIKPONTVCVRRVAVVQKAAG 753
Db 61 VLRVRAQDPPELFFVK-----DRLRTVEVIASIIKPONTVCVRRVAVVQKAAG 108

RESULT 92
ABG71628
ID ABG71628 standard; protein; 100 AA.
XX ABG71628;
AC ABG71628;
DT 09-JAN-2003 (first entry)
XX
DE hTERT fragment with HLA containing polypeptide at its C-terminus.
XX Human; telomerase catalytic subunit; hTERT; human leukocyte antigen;
KW human telomerase reverse transcriptase; HLA epitope; cancer; HLA profile;
KW breast cancer; pancreatic cancer; colorectal cancer; lung cancer;
KW ovarian cancer; cervical cancer; malignant melanoma; leukaemia; lymphoma;
KW biliary tract carcinoma; anti-cancer; mutant; cytostatic;
KW HLA class I epitope; HLA class II epitope; mutein.
XX Homo sapiens.
OS Synthetic.
XX WO200270679-A2.
XX 12-SEP-2002.
XX 19-FEB-2002; 2002WO-NO000069.
XX 02-MAR-2001; 2001GB-00005238.
XX (GEMV-) GEMVAX AS.
XX Eriksen JA, Gaudernack G, Moller M;
XX WPI; 2002-750459/81.
XX New polypeptide with an additional C-terminal and/or N-terminal sequence,
PT useful for preparing anti-cancer vaccines.

Disclosure; Fig 2; 62pp; English.

The present invention relates to a polypeptide comprising a 20 amino acid
sequence derived from human telomerase catalytic subunit (or human
telomerase reverse transcriptase, hTERT) amino acid residues 537-556, or
fragments thereof comprising at least 10 amino acids and at least two
human leukocyte antigen (HLA) class I or class II epitopes. The invention
also describes a polypeptide having the above 20 amino acid peptide
sequence as additional C- and/or N-terminal sequences on a fragment of
hTERT which is not more than 100 amino acids of hTERT. The polypeptides
of the invention are useful in a pharmaceutical composition or in a
vaccine for preventing or treating cancer in populations of individuals
having varying HLA profiles. The polypeptides are also useful in a
diagnostic kit for diagnosing cancers such as breast, pancreatic,
colorectal, lung, ovarian or cervical cancer, malignant melanoma,
leukaemia, lymphoma or biliary tract carcinoma. The polypeptides or
encoding polynucleotide sequences are useful for performing identity,
sequence homology and/or hybridisation studies, for predicting structure


```
Db      245 LGGTAFVQMPAHGLFPWSGLLDTRTLEVQ 274
|||||
RESULT 100
ADG70123
ID      ADG70123 standard; protein; 592 AA.
XX
XX      AC
XX      ADG70123;
XX      AC
XX      11-MAR-2004 (first entry)
XX      HIV RT/hTERT chimeric construct #4.
XX
XX      cytostatic; gene therapy; reverse transcriptase-inhibitor; HIV-1;
KW      human telomerase reverse transcriptase; hTERT; chimeric; catalytic site;
KW      unregulated cellular growth; cancer; tumor.
XX
OS      Chimeric.
OS      Homo sapiens.
OS      Human immunodeficiency virus 1.
XX
XX      WC2003095605-A2.
XX
XX      20-NOV-2003.
XX
XX      14-APR-2003; 2003MO-EP003874.
XX
XX      08-MAY-2002; 2002US-0378820P.
XX
XX      (PHAA ) PHARMACIA ITAL SPA.
XX
XX      Moll J, Schnuchel A, Stouten P;
XX      WPI; 2004-012095/01.
XX
XX      New HIV-1 Reverse Transcriptase and human Telomerase Reverse
PT      Transcriptase proteins and nucleic acids, useful in gene therapy or for
PT      treating or preventing unregulated cellular growth, e.g. cancer cell or
PT      tumor growth.
XX
XX      Example 1; SEQ ID NO 13; 141pp; English.
XX
XX      The invention relates to the isolation of compounds that bind and inhibit
CC      the activity of HIV-1 reverse transcriptase (RT) or human telomerase
CC      reverse transcriptase (hTERT). The method involves determining these
CC      compounds using a HIV-1 RT/hTERT chimeric construct containing the
CC      catalytic sites of each enzyme. The nucleic acid is useful for treating
CC      or preventing unregulated cellular growth, including cancer cell and
CC      tumor growth. It is also useful in gene therapy. Compounds that inhibit
CC      telomerase activity can be used to treat cancer. The vectors of the
CC      invention can be used to amplify DNA or RNA encoding HIV-RT/hTERT and/or
CC      express DNA which encodes HIV-RT/hTERT. This sequence corresponds to a
CC      chimeric HIV-RT/hTERT protein construct.
XX
XX      Sequence 592 AA;
```

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Query Match          7.7%; Score 459; DB 8; Length 592;
Best Local Similarity 39.4%; Pred. No. 2.6e-29;
Matches 130; Conservative 17; Mismatches 39; Indels 144; Gaps 13;

QY      624 IPKPDGLRPVNNMDYVVGARTFRKRAERLTGRVKALFSLNVERARRPGLLGASVLGL 683
Db      79 IDKPDGLRKLVD-----FR-----ELNKRQTDFWEV-----QLGI 108

QY      684 DDIHRAWRTFLVRAQDPPP-----ELYFVKVDYVTGAYDTIPQDLRTEVIASIIKPQNT 738
Db      109 -----PHPAGLKKKGYFVKVDYTGAYDTIPWDE----- 136

QY      739 YCVRRYAVVQKAHGHVRKAFKSHVSTLTLDLPYMRQFVAHLQETSPLRDPAVIEQSSSL 798
Db      137 -DFRKYT-----AF-----TIP-----SI 149
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Search completed: January 13, 2005, 15:52:40
Job time : 124 secs

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QY      799 NEASSGLFDVFLRFMCHHAVRIRGKSYVQCQGIPOG-----SILSTLLCSLCYGD MENKL 853
Db      150 NNETPG-----IRY-----QYNVLPQGWKGSIPAIFQSSMTKIL-----EP 184

QY      854 FAGIRRDGILLRLVDDFLLVTPHLTHAKTFLRTLVRGVPEYGCWNLARKTVNPPVEDEA 913
Db      185 FKKQNPDIILLRLVDDFLLVTPHLTHAKTFLRTLVRGVPEYGSVNLARKTVNPPVEDEA 244

QY      914 LGGTAFVQMPAHGLFPWCGLLDTRTLEVQ 943
Db      245 LGGTAFVQMPAHGLFPWSGLLDTRTLEVQ 274
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